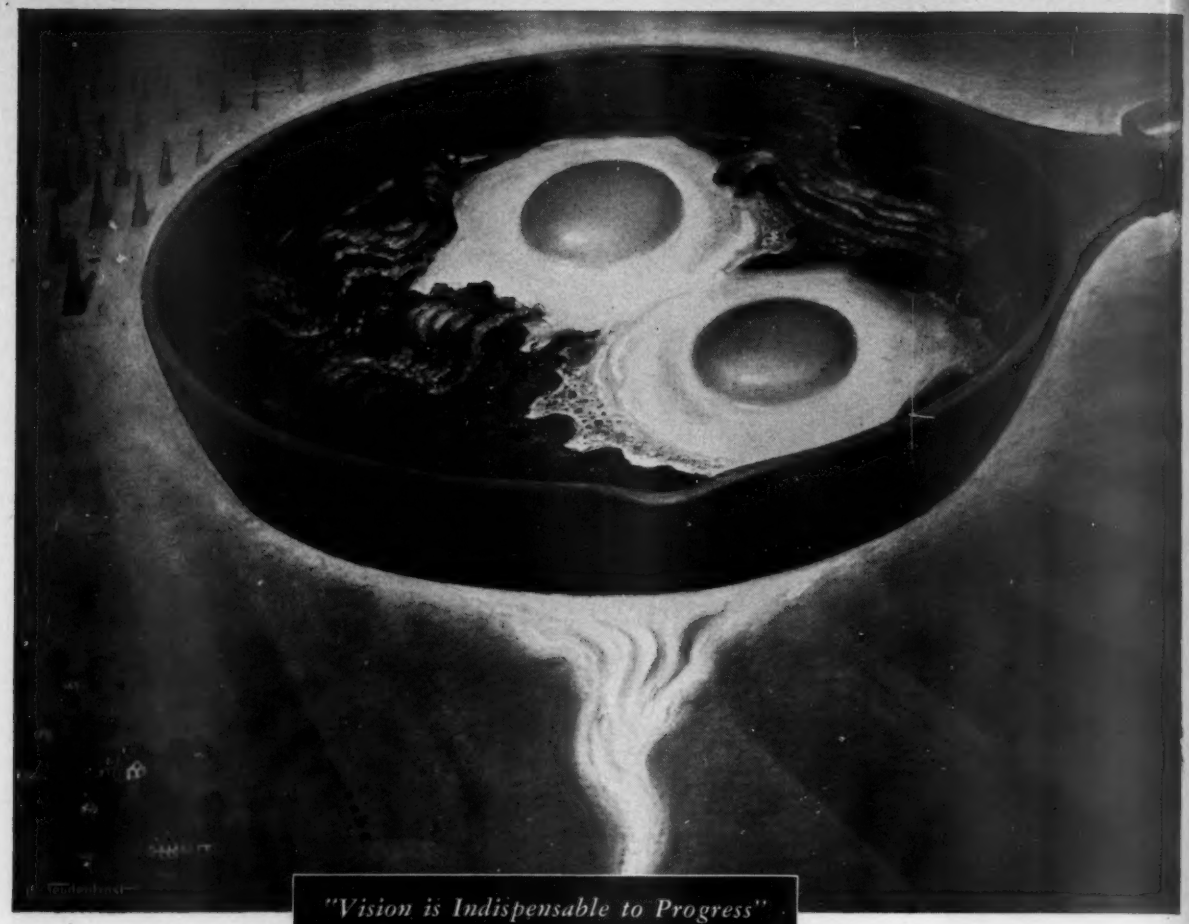
AMERICAN GAS ASSOCIATION

Monthly

EBRUARY
1953



"Vision is Indispensable to Progress"

How sunshine stored a billion years ago cooks your bacon and eggs today

More than twelve million housewives now cook with natural gas—a fuel formed by decomposition of plants and organisms that fed on water and sunshine a billion years ago.

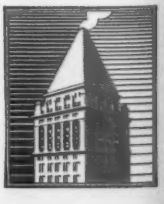
"Burning springs"—natural gas—were known in America as early as 1775. But for more than a century, use of this stored sunshine was confined largely to those localities in which it was found. Then came a great new industry.

Men with capital and vision enlisted the services of the geophysicist and the know-how of makers of steel, pipe, pumps, valves. They drilled wells, laid pipe lines, built compressor stations, provided huge underground storage in sandbeds and depleted oil and gas fields.

Today, from areas totaling less than 1% of the U. S., natural gas flows through a 3-billion dollar, 325,000-mile pipeline network, serves 2 out of every 5 homes and over one-and-a-quarter million commercial and industrial establishments. It constitutes four-fifths of the nation's entire gas supply.

Natural gas pasteurizes milk, melts pig iron, fires brick and cement, heats water, bakes bread, speeds the flow of defense materials.

This development of a prime source of energy, from a product that once went to waste, is typical of what free men, teaming up under a system of private business management, are doing to improve an already high standard of living.



BANKERS TRUST COMPANY

16 WALL STREET, NEW YORK 15, N. Y.

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

The potent investment potentialities of natural gas have inspired the financial support—and here, the advertising advocacy—of banks and investment houses. This ad was inserted in Newsweek, U. S. News & World Report and Business Week

Blast-thrown Maumee River water becomes a momentary monument to natural gas progress, as an Ohio Fuel Gas Co. pipeline marches to join Panhandle Eastern's line

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GIVE your sales program the pressure of gas, the practicality of the newest appliances and the sparkle of their attention-getting design and what'a'ya got? Brother, you got sales!

From alert, sales minded members across the country come case histories of promotions that exceeded sales quotas, of promotions that paid off in sparked-up dealer cooperation, of promotions that replaced outmoded gas appliances with the latest satisfaction-enhancing ones and of promotions that increased gas load by selling new appliances. Each of these promotions had one great common denominator: the men behind them decided that they —and their staffs—would wear out the soles of their shoes rather than the seats of their pants, both figuratively and literally.

Old fashioned door-to-door selling, with thorough support in all available promotional media is essential if utilities are to maintain for gas the leading position it deserves.

Are you wearing out shoe soles or pants seat? Sales-worn soles can be replaced with quota-top dollars. But let competition get you over a barrel and you may someday wear the barrel in place of your inertia-worn pants.

JAMES M. BEALL
DIRECTOR, PUBLIC INFORMATION
LAURANCE C. MESSICK
EDITOR
RICHARD F. MULLIGAN
ART SUPERVISOR
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NEWS EDITOR

EDITORIAL OFFICES:
AMERICAN GAS ASSOCIATION
420 LEXINGTON AVE., NEW YORK 17, N.Y.

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VOL. 35 NO. 2

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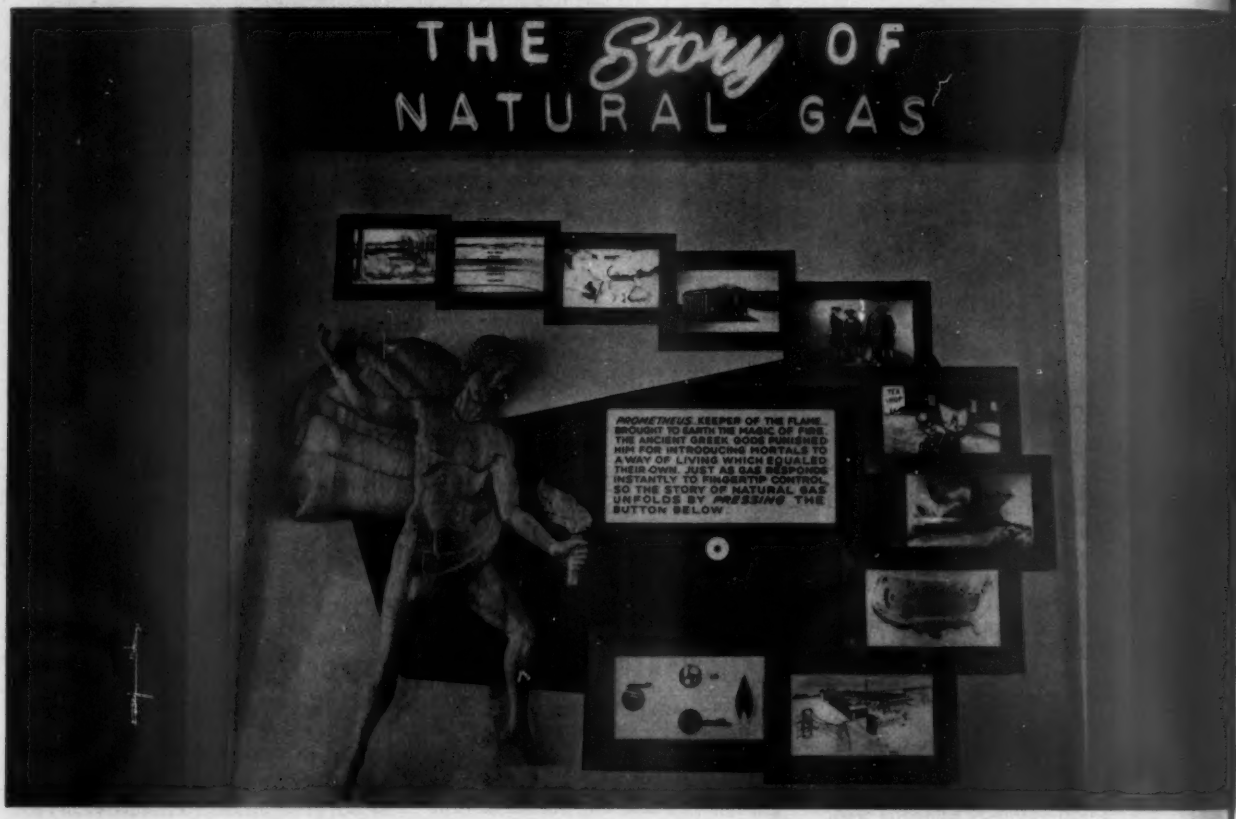
Well-to-user story dramatized



Customer appreciation of the wonder of natural gas is deepened by the easy-to-assimilate story of its history, production and distribution presented by Northern Natural Gas Company

Walt LaHue, commercial artist, works on the 22 foot oil mural background that gives the models depth and perspective

President J. F. Merriam, Asst. Gas Sales Supt. R. E. Adwers and Vice-President M. L. Mead view the model display units

Arranged sequentially, the scale model display with scenic backdrop depicts the well-to-user story of natural gas

Visitors to Northern Natural Gas Company's office building in Omaha get a pleasant, easily assimilated course in the history and the potentialities of natural gas. There, in an invitingly lighted display room, strategically located at the building entrance, is an integrated collection of three-dimensional scale models, eye-catching historical sketches, an allegorical wood carving and a dramatic map tracing the well-to-consumer flow of natural gas.

First to draw the visitor's attention is a miniature transmission system, spread across the entire wall opposite the entrance. Small three-dimensional models show the various stages gas passes through between well and consumer. Scaled models include a gas producing well, gasoline processing plant, compressor station, pipeline district office, two border stations, homes and offices of consumers. To give the display a further touch of reality there are railroad and overhead crossings, highway and water undercrossings and a cathodic protection unit.

Directly above the model display are four inset panels in the shape of a flame. In each panel is an intricately constructed model of four major factors in the natural gas industry including a gas well derrick, compressor cylinder, valve that controls gas flow in the main line and a cross section of a home showing gas appliances.

Beside the entrance doorway is a back lighted pictorial history of natural gas. Ten color transparencies with coordinated explanatory sound recording, are lighted in succession after a visitor touches a control button. Beside the pictures is a 30 inches by 40 inches Magnolia-wood carving of the legendary Greek god Prometheus, keeper of the flame.

One entire wall is devoted to a pictorial charting of Northern Natural's organization, operations and personnel. Framed in a free-form design, this grouping of photographs carries the visitor's attention easily along to the automatic gas clothes dryer displayed in the adjacent corner.

The automatic gas clothes dryer—among the newest additions to gas-fueled, convenience-promoting home appliances—represents the means of finally converting natural gas into terms of hours saved and jobs more effectively, more easily completed. It is flanked by an illustrated panel showing how it saves work. This portion of the room has been designed to enable different gas appliances to be displayed on the stand where the dryer is now located. It is also possible, and anticipated, that smaller exhibits may be located along the walls flanking the exhibit room entrance, or even in the center of the floor.

This unusual room is the result of many hours of planning and work by R. E. Adwers, Northern Natural's assistant superintendent of gas sales. He made the tentative plans and supervised the construction of the display. Actual construction took nearly a year.

A compressor station—new additions to countrysides through which natural gas now moves—is modeled in miniature

Scale model home and industrial plant, backgrounded by commercial buildings, epitomize the many uses of natural gas

A refrigeration-type natural gasoline plant depicts one of the by-products derived from natural gas wells

Coast gas has bright future

By J. S. MOULTON

Vice-president and executive engineer
Pacific Gas & Electric Company, San Francisco
and President
Pacific Coast Gas Association

Industry leaders agree that years of continued growth and activity lie ahead for the gas and electric utilities, their suppliers, the manufacturers of appliances, the jobbers and the dealers.

In the West, the rate of growth has been above the national average. It will continue to be so for years to come.

During and since World War II, the gold rush migration to the West has been repeated on a vastly larger scale. People came westward in unprecedented numbers and they continue to come. Industry came and continues to come with them. Native population and business likewise have grown.

The population of Arizona, California, Nevada, Oregon, Utah and Washington grew from some six million persons in 1920 to nearly 16 million in 1950. The Census Bureau predicts a total of almost 21 million by 1960.

The gas and electric utility industry has performed the almost superhuman task of meeting the West's expanding requirements. In the natural gas industry, growth has been as impressive as that of the business managed electric companies. The 1945 sendout of California natural gas utilities was some 390 billion cubic feet. For 1952 it is estimated at 688 billion cubic feet, a gain of 75 percent. Sendout for 1954 is estimated at approximately 750 billion cubic feet.

At the present time California companies are entitled under contract to a maximum daily demand from their out-of-state sources of 805 million cubic feet per day. This will be increased to 1,105 million in 1953. If required regulatory approvals are obtained, it will climb to 1,405 million cubic feet per day in 1954.

No decline in population growth is expected in the Western states. The utilities, both gas and electric, are planning ahead to meet an even greater growth in the future. It is expected to be greater, because of new population and because the domestic customer, the commercial establishment and the industrial plant are all increasing their individual requirements for gas and electricity. This growth means more than large expenditures by the utilities themselves. It means a tremendous market for the manufacturers of gas and electric appliances and for the dealers who will sell and install them. For example, it is estimated that in Pacific Gas & Electric Co. territory alone between now and 1960 the aggregate volume of retail sales for new installations and replacements of gas appliances will amount to $275 million. For the West as a whole, the market for gas and electric appliances will provide good business for aggressive manufacturers and dealers.

Investor confidence shown

The expansion of the investor-owned electric utilities in the western states from 1946 through 1951 has required construction expenditures aggregating $2,350,000,000. The expenditures of natural gas utilities have likewise been the largest in their history. There is no indication that the current rate of expenditures will show any material decrease over the next several years. It is significant that the construction programs of these utilities have been financed in large part from the sale of securities in the competitive capital markets, without government help or subsidy. Only a small part of the required funds has come from internal sources.

The second problem is the raising of the tremendous amounts of new capital which will be required. A corollary of this problem is the need for adequate rate levels so as to produce earnings which will enable our utilities to attract this capital on reasonable terms. The long-range interest of our customers can be best served only if we have the financial strength and credit which will permit us to treat existing security owners fairly; which will attract the large amounts of new capital so vital to the development of this rapidly growing western area.

A third problem of particular importance to gas utilities is obtaining supplies of gas sufficient to meet growing requirements. Those of us from California and from the Salt Lake area know that this is not an easy task. Representatives from the Pacific Northwest know of the earnest and continuing efforts since the war to obtain natural gas for that area. The higher prices being paid for natural gas will encourage drilling, to the extent necessary to provide needed supplies.

A fourth problem of interest to all is customer service. It is essential that we think of and deal with every one of our customers as an individual. We must never think for one moment that we can afford to incur the ill will of a single customer by neglect, discourtesy or poor service. We must impress this on every utility employee; each employee *is* the company in the eyes of some customer.

A major problem will be the training of personnel within our organizations. Increasing size of many utilities makes it more and more difficult for younger employees to obtain a well rounded understanding of the scope and problems of our industry. More and more companies are turning to training courses for supervisors and executives. Where carried out, these courses have been of inestimable benefit to management and to the individual. Look for their extension in the years ahead.

In anticipating the years ahead we may differ as to probable growth, the extent of government in business, the direction and overlapping of regulation. But doubtlessly we can all agree that the work of every individual in the gas and electric utility industry will be interesting and absorbing. It will be ever changing. Opportunity lies ahead for those who seek it, honestly and courageously, through application and industry on the job, whatever it may be, through personal development, and through cooperative work in association.

Abridged version of an address before the Joint Fall Conference, Pacific Coast Gas Association customer and general accounting section and the Pacific Coast Electrical Association administrative services section, Fresno, Calif., November 19, 1952.

Plan second management study

Informal after-hour discussion groups expanded on Workshop subjects. Living, studying and relaxing in the sequestered atmosphere of Arden House enabled participants to give undivided attention

From a curriculum that covered top-level management training, education, psychology and philosophy, participants formulated their own programs for the selection and training of executives

The second Utility Management Workshop opens May 18 at Arden House, against a background of enthusiasm generated among participants in the 1952 session. High praise has been forthcoming from the students for the choice of subject matter, the caliber of the teaching staff and the quiet, almost cloistered atmosphere under which the classes and after-hour discussions were held.

The workshop had its inception early in 1952, when a few prominent utility industry leaders decided to act upon the seriously mounting shortage of management manpower. Within the next ten years, they noted, retirements will cause an alarming number of vacancies in top level management positions.

In addition, the recent rapid growth of the industry, and the prospects for further expansion in the next few years creates an even greater need for management talent. The World War II dislocation of training and promotions procedures further aggravated the shortage. The situation called for a means to develop men capable of assuming management leadership in the gas industry.

Recruiting of qualified, or potentially qualified, executive manpower from outside a utility is difficult and undesirable. Utility operations are such that men must be experienced primarily in their activities. Experience in other lines of endeavor is difficult to translate into service of this type.

In the light of these considerations, a utility management workshop was decided upon, to consider selection and training techniques.

Accepted by the Department of Industrial Engineering, Columbia University, the course was formulated by Professor Robert T. Livingston, with the advice of the industry leaders who developed the plan. Experience as an educator and years as an executive of Long Island Lighting Co., eminently qualified Dr. Livingston to be workshop director. He selected a competent staff to assist in the work and to prepare material.

Arden House, in the rolling countryside near Harriman, N. Y., was selected as the campus. Its quiet and distinctive surroundings contributed greatly to the success of the plan. Outside distraction was reduced to a minimum, while close association with other participants encouraged discussion.

Books and other publications pertinent to the subject were digested and abstracted and sent to the participants well in advance of the workshop. They also received a complete bibliography and several text books for more concentrated study. This procedure saved countless manhours of reading during the workshop. For more detailed study, a special collection of texts from Columbia University Library was assembled at Arden House.

Forum discussions of the individual experiences of workshop members provided a practical background and a point of departure for attacking the problems. Many of the dozen or more experts on the schedule had experience in the train-

(Continued on page 43)

Proof of the gas-fired incinerator market potential lies in the results chalked up by alert sales-minded utilities

Incinerator promotions reap handsome rewards

By NOEL WICAL

● Under the headline, "Gas-Fired Garbage Burners Sell Well in Cleveland, Their Future's Rosy," the rising popularity of gas fired incinerators in all parts of the country was reported in detail in the January 5, 1953 issue of "Advertising Age." The article follows.

Gas-fired home incinerators, already blazing into popularity in Cleveland, soon will flare up in a dozen other metropolitan markets.

Sales and promotion plans are tentative but ambitious. Manufacturers are certain their little garbage burners will have a big future.

By using Cleveland-proved methods to woo householders, the producers confidently expect the gas disposal units to become a sizzling item in the home appliance field.

In northeastern Ohio, where sales are described as "super brisk," 8,000 garbage burners were purchased in 1951. Sales this year will jump beyond 22,000 and total $2,250,000.

Demand has been stimulated chiefly by East Ohio Gas Co., utility serving the Cleveland-Akron-Youngstown area. East Ohio sponsors an intensive, cooperative promotion for the units. A handy assist is given by the American Gas Association, which plugs the new appliance in customer and dealer booklets. The A. G. A.'s copy-rich literature is warming up other gas-served markets.

A trio of disposal units—the Calcinator, Incinor and Gasinator—are getting a big play here. Much of this advertising is sponsored jointly by East Ohio and appliance distributors and dealers.

The Gasinator is made by Cleveland's Gasinator Manufacturing Co., the latest and one of the largest entries into the field. The firm grew out of Adams Manufacturing Co., which started production last May, turning out 1,200 incinerators monthly.

Incinerator sales immediately leaped in the Cleveland area and Adams couldn't keep up with the demand. The new firm, headed by A. S. Katz, former Adams president, was organized November 15 to "get into heavy production." Gasinator plans to erect a new plant, intends to step up output by 500 percent to 600 percent according to A. O. Fredrick, sales manager.

"The home incinerator promises to become the fastest growing appliance in the country, matching the initial growth of washing machines," says Mr. Katz.

The same rosy hopes are held by Bowser Inc., Cairo, Ill., maker of the Incinor, and by Valley Welding & Boiler Co., Bay City, Mich., which produces the Calcinator. At least a dozen other manufacturers are in the field, as compared with three in 1946.

General sales appeals for Cleveland's three best sellers could be used—and are used—for rivals.

Newspaper advertising sponsored by East Ohio Gas, and prepared by Ketchum, MacLeod & Grove, Pittsburgh, recently showed readers a chock-full garbage can almost buried in snow.

"Why go outdoors to empty garbage?" the advertisement asked. "Go modern—go GAS with a gas disposal unit."

A springtime ad urged home owners, "Breathe the freshness of spring right in your back yard—without unpleasant garbage-can odors." Last summer, East Ohio told backyard picnickers: "Time for outdoor living! Time to get rid of garbage cans!"

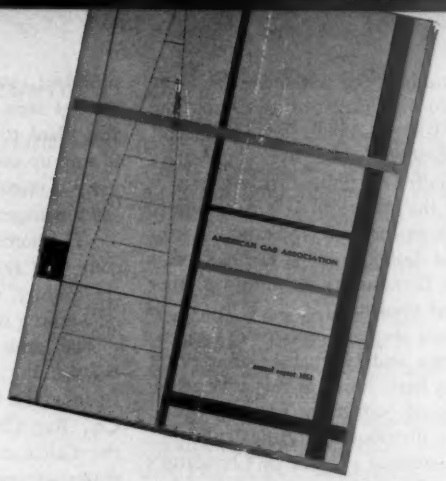
The indoor trash and garbage burners range in height to about three feet. Some look like curbside mail boxes; some are barrel-shaped. Sitting in utility room or basement, or even kitchen, they have outlets into the home chimney flue, or a separate flue, depending upon local residential building codes.

The burners hold one to two and-a-half bushels and range in price from $60 to $250. The models leading in Cleveland sell for $115 to $200, and average $125.

Harold E. Eckes, advertising manager of East Ohio Gas Co., a director of the

A. G. A. Annual Report wins place in country-wide printing exhibit

The American Gas Association's Annual Report for 1951 has been selected by a distinguished jury of graphic art authorities for display by the American Institute of Graphic Arts in its Printing for Commerce exhibit. It is included among 180 printed pieces selected from 2,000 entries as outstanding examples of fine design, artwork and printing. Currently on view in New York City, the Printing for Commerce exhibit will be shown throughout the country.



Public Utility Advertising Association, says:

"In our field, the household gas incinerator has become one of two postwar glamor and convenience appliances, the other being the gas clothes dryer."

Mr. Eckes is quick to admit why his own utility and other gas firms are keen for helping sell garbage burners: The burners provide a steady day-to-day demand for gas, and one that requires very little service. The 22,000 incinerators sold to East Ohio Gas customers this year will use an average of 12,000 to 15,000 cubic feet of gas, or about nine dollars worth per incinerator. That means nearly $200,000 worth of gas.

Three years ago, the Cleveland gas utility looked long and hard at the incinerators, studying their installation, use and gas consumption, and distributed dealer-education materials. It selected several distributors of out-of-town makes (nobody was manufacturing incinerators in Cleveland at the time) and agreed to share promotion expenses.

The gas company bought booklets on incinerators prepared by the A. G. A., and circulated them to 800 appliance dealers in the densely residential northern Ohio area served by East Ohio. In 1950, the company started its incinerator advertising, with street car cards and signs on 500 service trucks, and shared cooperative radio and newspaper advertising with dealers.

The A. G. A. booklets, providing copy themes for incinerator advertising here and elsewhere, herald 10 benefits for homeowners using gas disposal units:

1. An incinerator cuts down steps because the unit is inside the home.

2. It cuts down work. It's completely automatic. Gas first dries the wet garbage, then reduces the load and finally consumes every scrap.

3. It cuts down pests.

4. It cuts down disease. The disposer gets rid of food scraps before they become garbage—garbage is not only the natural breeding ground for bacteria but the favorite feeding ground of flies.

5. It cuts out odors.

6. It cuts out legal problems. Gas incineration is the only kind of garbage disposal that is legal in many communities.

7. It cuts out "eye sores."

8. It cuts out "double disposal." It takes all the garbage a sink grinder will, plus many things that would break a mechanical grinder. It disposes of paper, boxes and cartons, vacuum sweeper dirt, old rags.

9. It cuts dangers.

10. It cuts costs. "It costs less to install than any other modern garbage disposer. And it costs less to run! It has no blades to dull—no motor to wear out."

Economy of the Gasinator is praised weekly on Cleveland's "Gasinator Theater," a movie film program sponsored on WEWS-TV by Gasinator Mfg. Co. in cooperation with The East Ohio Gas Company. Commercial breaks on the late Saturday night show are handled by "a married couple" team of announcers. In living room dialog, the pair reviews the features of Gasinator, "the automatic gas disposal with the two-bushel capacity, that works for you continuously for only 2½ cents a day. "The Gasinator," they tell viewers, "gets rid of 20 times as much refuse by actual volume as the ordinary sink-type unit."

The television shows were added to the East Ohio cooperative program early this year.

Similar claims for the proficiency and cheap operation of home gas incinerators are made on rival programs, Baird Foerst Co., Cleveland distributor of Incinor, sponsors "Ten Thirty Theater," showing feature-length movies on Tuesday nights over WEWS. This program is one of Cleveland's most popular with the pulse rating hitting 28 in October.

On the same station, on Sunday afternoon, Calcinator displays its wares. The program, a local talent dancing show, "Steps to Stardom," is sponsored by Cleveland Wholesalers Inc., appliance distributor.

Marcus Advertising Agency is handling Gasinator's TV advertising, while Marc A. Wyse Agency produces its sales promotion materials.

Mr. Eckes thinks the potential market for home disposal units is emphasized by what is happening in Cleveland. "Supply and delivery are running 600 to 700 units behind the monthly demand," Mr. Eckes says.

As for the nation, *Domestic Engineering* sees the incinerators just on the brink of vast sales. In a recent issue, the publication said: "Potentially, there is a very large market for domestic incinerators. In small homes, the market saturation is barely one-half percent, and for exploitation it awaits only a thorough selling job."

"Looking westward, the Rocky Mountain Gas Association has set its sights on the sale and installation of from 20,000 to 30,000 gas-fired incinerators in Denver's 90,000 homes within the next few years. Of Denver's 90,000 homes, 97 percent are heated with gas, according to *Gas Appliance Merchandising*. The monthly reports that 500 new homes in

(Continued on page 48)

A hard-swinging sales manager draws from broad experience to tell why gas utilities must learn that

Merchandising is a must!

By W. L. HAYES

General Sales Manager
Montana-Dakota Utilities Company
Minneapolis, Minnesota

Our electric competitors are outselling us, and by so doing they are taking essential business that properly belongs to the gas industry.

In the *Wall Street Journal,* February 13, 1952 electric range manufacturers boasted that electric range sales had inincreased steadily during recent years, while gas range sales remained static. The article stated that fifteen years ago there were sixteen gas ranges sold for each electric range, but in 1951 the ratio had dropped to one and one-half gas ranges to each electric range.

Jim Nance, president of Hotpoint, was quoted as having made the amazing statement that the swing from gas cooking to electric cooking was just as logical and just as inevitable as the swing from gas lighting to electric lighting.

I have known Jim Nance for a long time, and I cannot help but wonder what prompted him to make that statement. There is no denying the superiority of electricity over gas for lighting, but there is no comparable comparison as to the cooking load. The superiority of the gas range over the electric range is undeniable, even by the most prejudiced minds. The gas range costs less to buy than the electric range. The gas range costs less to install than the electric range. The gas range costs less to operate than the electric range. And the gas range costs less to maintain than the electric range.

Performance-wise, the gas range is superior. It is faster, it is more flexible. Broiling done on a gas range is far superior to that done on an electric range. If the electric range enjoyed the superiority over the gas range that the gas range enjoys over the electric range, can you imagine what the sales ratio would be then? It would be murder!

What is it that prompts electric manufacturers to be so confident that the electric range will completely supplant the gas range? I think I know the answer. Our competitors have recognized that the gas industry is laying down on the job. We've lost our punch. We're losing essential business to electric competition, and we don't seem to have the gumption to fight back.

Selling gas is basic

We're in the gas business to sell gas. Our primary function is that of selling our product, which is gas. In operating the gas business we have to drill gas wells, we have to build transmission lines and distribution systems. But those activities are all incidental to the fact that our primary reason for existence is to sell our gas. And if we can't sell the gas, we'll have no need for gas wells, transmission lines or distribution systems.

Twenty-five years ago, all gas companies were in the merchandising business and employed retail appliance salesmen. And at that time we were not losing business to electric competition. But during recent years, large segments of the gas industry have gone out of the merchandising business; they no longer employ retail appliance salesmen. In other words, we have decreased our sales effort, while our competitors have increased theirs.

How long would General Motors be the leader in the automotive industry if it disbanded its sales department and its competitors, Ford, Chrysler and the rest, maintained aggressive sales departments? How long would General Motors need a production line after it had disbanded its sales department?

For the life of me, I cannot understand why the top management of so many gas companies are willing to stand idly by and see electric competition move in and take business that belongs to the gas industry, and still seem unwilling to do anything about it.

Why is it that the top management of so many gas companies shy away from reestablishing their merchandise department as though it were a contagious disease? Why is it that they look down their noses at the suggestion of hiring retail appliance salesmen as though they were subversives of one kind or another? Are we too good for the business we are in? Are we too proud to fight for the business that belongs to the gas industry?

There is an old saying, and a good saying, that when a man gets to be too good for the business he is in, it's time to get into some other business. Is there anything immoral, improper or indecent about gas companies being in the merchandising business and employing retail appliance salesmen? There wasn't anything improper, immoral or indecent about it twenty-five years ago—and at that time we weren't losing business to electric competition.

There isn't anything improper, immoral or indecent about it today, on the part of our electric competitors.

The March 1952 issue of *Electrical*

Abridged version of an address before the joint meeting of the Residential Gas Section and the Industrial and Commercial Gas Section, A. G. A. Convention, Atlantic City, October 27-30, 1952.

World contains a story in which it is stated that 67 percent of all the electric light and power companies in the country today are back in the merchandising business. It is conservatively estimated that there are between 30,000 and 35,000 retail salesmen selling electric appliances. A survey just completed by A. G. A. Headquarters reveals that there are not more than 3,000 salesmen working for all of the gas companies in the country. Thirty-five thousand salesmen selling electric appliances, three thousand salesmen selling gas appliances! Is it any wonder that we are losing business to electric competition?

Toward a rude awakening

The explanations given by gas companies around the country for not getting back into the merchandising business are intriguing, to say the least. One explanation is that the top management of many gas companies are so busy and so involved in operating problems that they don't have the time to be bothered with sales problems. In my opinion that kind of top management will wake up one of these days and discover that they don't need to be bothered with either operating problems or sales problems, because competition will have moved in and taken all of the business.

Perhaps the most common reason given for not being in the merchandising business is that the gas appliance dealer can do the selling job for the gas industry. Now, when I get on the subject of the gas appliance dealer, I have to be careful because someone is always bound to say, "Well, Bill Hayes is unfriendly to the gas appliance dealer," and nothing could be further from the truth.

But I do believe that in an industry of this size we should be realistic about it and face up to the facts as they are. And the facts are that the gas appliance dealer is not doing the selling job for the gas industry; the gas appliance dealer is not able to do the selling job alone for the gas industry; and there isn't any reason why the gas appliance dealer should do the selling job for the gas industry. That is the responsibility of the gas industry, itself.

At least ninety percent of the so-called gas appliance dealers also sell electric appliances. They aren't interested in building gas load for the gas company. They aren't interested in protecting gas load for the gas industry. They are interested in selling appliances at a profit; and if they can make just as much profit selling an electric appliance as a gas appliance, they'll sell an electric appliance.

In the second place, a large majority of all gas appliances sold by dealers throughout the country today are sold by department stores, furniture stores, hardware stores, filling stations, and the like. Those merchants have a thousand and one other items to sell besides gas appliances. Gas appliances are of secondary consideration to most of them. They would just as soon sell a davenport, or a lawn-mower, or a set of tires, as a gas appliance.

I don't think the gas industry can depend upon that kind of half-hearted salesmanship to protect the gas load. Do you think you have done the gas appliance dealer in your area a favor by going out of the merchandising business and by leaving the selling job to him alone? The fact of the matter is that you have done the dealers a disservice. The records prove conclusively that where the

gas company is in the merchandising business and has retail appliance salesmen calling on their customers and are setting the pattern by selling top-quality merchandise at full list prices, and without excessive trade-ins, and are helping to create the demand for gas appliances, the gas appliance dealers sell more appliances and make more money than when they have the job to do alone.

We can take a page out of the book of our electric competitors to prove that point. The same March issue of *Electrical World* contains another article in which the comparison is made between two large areas of the country, as far as electric appliance sales are concerned. In one area, 88 percent of the light and power companies are back in the merchandising business. In another area, only 45 percent of the light and power companies are in the merchandising business. And while I say "only 45 percent"—less than 20 percent of the gas companies are in the merchandising business.

But in the area where 88 percent of the light and power companies are merchandising, more than twice as many electric appliances were sold as in the area where only 45 percent were merchandising. The number of appliances sold was in direct ratio to the aggressiveness of the utility company.

Do you think that appliance dealers generally are opposed to having utility companies in the merchandising business? That is a presumption and not a fact.

Gerald Stedman, editor of *Private Executive Report*, spends all of his time going all over the country, contacting utility companies and appliance dealers. And he has made it a point during recent months to ask appliance dealers about their attitude toward utility company merchandising. He has authorized me to report for him—that 86 percent of the dealers questioned said that they were not opposed to the utility company being in the merchandising business. Many of the dealers questioned expressed regret that the utility companies had gone out of the merchandising business, and others expressed the hope that they would get back into the merchandising business.

One retailing organization, with 125,000 dealers, said they hoped that the utilities would stay in the merchandising business.

So, this supposition that the dealers are opposed to the gas company merchandising is not a fact. The dealers have found out from experience that when the gas company is in the merchandising picture, helping to do the selling job, they sell more merchandise and are more prosperous than when the job is left for them to do alone.

We can sum up this dealer situation with these five points:

1. The gas appliance dealer is not doing the selling job for the gas industry.
2. The gas appliance dealer is not able to do the selling job alone for the gas industry.
3. There is no reason why the gas ap-

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Careful attention to design and operating procedures has minimized the possibility of pipeline breaks

Pipelines accent safety

By STANLEY OWENS

Director of Safety
Transcontinental Gas Pipe Line Corporation
Houston, Texas

With the advent of the piping of natural gas into urban areas that have never had its advantages, there has been some concern by the residents over its relative safety. This fear, without basis, has extended to engineers and members of the legal profession in those regions where natural gas is being pioneered. Actually, great care is taken to insure that these pipelines will operate with a maximum of safety.

Attention to pipeline safety begins in the steel mills where special alloy steels have been developed for fabrication. A ladle analysis is made on each heat of steel at the mill. Only plates from those heats conforming to the contract ladle analysis are used to form the gas transmission pipes.

Tensile tests are also conducted on specimens cut from one length of finished pipe made from a plate selected from each heat of steel. One transverse tensile test is made on a specimen cut from a finished pipe across the weld with the weld in the center of the specimen, to determine the ultimate strength of the weld.

Another transverse tensile test is made on a specimen cut from the same pipe, but 90 degrees from the weld, to determine the ultimate strength and the elongation of the steel.

After the rolling of the plate a physical inspection is made for gauge, flaws, and defects.

Abridged version of an address before the Mariners Club of New York, November 19, 1952.

The pipe is then double-welded by a submerged arc fusion welding process (both internally and externally). Each weld is inspected, both on the outside and inside at the mill. In addition, an X-ray control is used in the welding procedure at the mill.

Each length of pipe is then placed in a retaining die and subjected to an internal hydrostatic pressure to increase the initial yield point and expand the pipe to the specified outside diameter. Comparative tensile tests show that the yield strength of the steel is increased by 12,000 to 20,000 psi by the internal expanding or cold working operation.

Lengths pressure tested

Following the expanding operation, and with the same equipment, the retaining die is removed and a specified hydrostatic pressure test made. Each length is tested to a hydrostatic pressure that will produce a stress of 90 percent of the actual transverse yield strength as determined for each particular heat. The pressure test varies according to the thickness and the diameter of the pipe. On 30-in. by 0.3125-in. size pipe, a pressure test of 975 psi is applied. The test pressure is maintained for not less than 10 seconds.

For the determination of the pressure to be applied at the mill on the 30-inch by 0.3125-inch size pipe Barlow's formula is used.

$$P \text{ equals } \frac{2 \times t \times S \times 90\%}{D}$$

Where

P equals pressure, psi.
t equals wall thickness of pipe, in.
S equals minimum yield, psi.
D equals outside diameter of pipe, in.

Then, substituting we have:

$$P \text{ equals } \frac{2 \times 0.3125 \times 90\% \times 52000}{30}$$

P equals 975 psi.

While under pressure, the pipe length is further tested by being struck 10 blows with six-pound hammers, each approximately 24 inches apart along the entire length of longitudinal weld.

Each joint of pipe is then mill inspected for flaws, defects, circumferential tolerance, end finish and gauge.

Each joint of pipe is examined by inspectors from an independent firm of engineers, both externally and internally, and their findings reported to Transcontinental Gas Pipe Line Corporation.

Upon arrival at the railhead, the pipe is inspected while being unloaded, for possible damage en route.

A further inspection is made during the double-jointing welding procedure, which is followed on each spread.

When the pipe is strung in the field, each joint is examined for any damage that might have been caused in transit, unloading, stringing, or while stored on the right-of-way.

Before being permitted to weld on the pipeline, all welders must pass a qualifying test for high pressure electric welding.

All field welding operations are inspected by qualified welding inspectors who have successfully passed all welding tests themselves.

Each welder is equipped with an identifying stencil with which he marks each weld as completed. This identifies a welder in the event a weld fails to pass inspection.

A welding inspector has the authority to remove from the pipeline any weld that does not pass visual inspection or

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Ads point to gas as a bargain

Gas is an outstanding bargain, and becoming even more so as other household costs rise. This is the theme of ad series recently published by utilities in Ohio and on the Gulf Coast.

Drawing highly favorable comparisons between the skyrocketed costs of foodstuffs over the last seventeen years, and the static costs of gas, a series by The Ohio Fuel Gas Co. used national events of 1935 as attention catchers. These advertisements were designed to create an atmosphere favorable to the company's request for a rate increase in Mansfield, Ohio. Each closed with the "clincher" paragraphs:

"Mansfield residents still pay the same price for natural gas that they paid in 1935!

"In those 17 years the gas company's costs, like those of everybody else, have gone up and up.

"Seventeen years is a long time!

"To continue to give you the best in gas service, Ohio Fuel must have a higher rate.

"Even so, natural gas will still be the best bargain in your household budget. Gas will still cost less than other fuels for cooking . . . for water heating . . . for house heating."

In a second series, Ohio Fuel Gas stated that two and a half cents is the average daily cost of preparing three meals on a gas range. Then the purchasing power of that small sum of money was defined in terms of commonplace commodities—and found grievously meager.

The events of yesteryear are used to spotlight the marked rises in all housekeeping costs, except that of gas, which remains unchanged despite higher costs

his inflated market, two and a half won't buy very much, one ad series rates, but it will purchase enough to cook a day's meals for four

In a series of advertisements quoting the job-by-job cost of using natural gas in their homes, Gulf South homemakers learn what a great bargain they are getting

A typical ad in this series explained that, "During the years when other costs have been skyrocketing, the price of natural gas has stayed exactly the same. It hasn't changed in Mansfield since 1935.

"Now, to meet increased costs and to continue giving efficient, reliable service, the gas company must ask for a higher rate. Even so, you'll still be able to do all of your daily cooking for less than the cost of a pencil—two and a half cents.

"Natural gas will still be the biggest bargain in your household budget."

United Gas Corp., Shreveport, La., promoted public appreciation of the value of gas in a series inviting the reader to estimate the cost of cooking various foods and of drying a washer-load of laundry. In this series, too, the yesteryear level of today's gas rates was pointed out. For one ad, under a provocative headline, "What's Your Estimate of the Cooking Cost?," copy of one of the ads reads:

"Um-m-m, steaks for dinner—tender, juicy, delicious. Everybody knows how meat prices have increased since 1940. But, did you know the natural gas required to broil a steak like this—enough for the whole family—still costs less than a penny?

"Smart, modern housewives are still buying natural gas service for more pennies here in the Gulf South. No other item in the family budget performs so many wonderful services—so economically—as natural gas. We think you'll agree it's worth *many times* what it costs today!"

A.G.A. Laboratories' experiments on various meats answer questions on commercial gas and electric range comparisons

Conduct meat shrinkage tests

● The Committee on Comparison of Competitive Services assigned three meat shrinkage studies to the A. G. A. Laboratories. The first, Meat Shrinkage in Domestic Gas and Electric Ovens, was published in the A. G. A. MONTHLY, July-August, page 14. Now the remaining two studies—Meat Shrinkage in Commercial Gas and Electric Range Ovens and in Portable Roasting Ovens have been completed and are published here.

Part 1—Range Ovens

A. Equipment

Tests were conducted with one gas and one electric range oven, both of which are widely employed in commercial kitchens. The gas range was equipped with a graduated throttling thermostat.

The electric range was one of the more popular electric makes. Oven temperature was controlled by means of a snap-acting thermostat. The electric range oven was equipped with top and bottom heating elements. The top element was located in the oven compartment, and the lower element was located underneath the oven bottom. Top and bottom elements included separate switch settings of high, low, and medium. For these tests, both elements were operated at the high setting and were energized simultaneously by the thermostat.

Input rates were 20,500 Btu per hour (6 KW) for the electric oven, and 42,000 Btu per hour for the gas oven.

All oven, room, and internal meat temperatures were measured with thermocouples which were connected to an electronic recorder. Both oven thermostats were calibrated for temperature adjustments by means of five parallel-connected thermocouples.

Weights of pans, meats and drippings, needed to calculate the percent shrinkage, were measured by means of a laboratory kitchen scale which could be read accurately to ± 0.01 lbs.

B. Supplies

Tests were conducted employing four different cuts of meat. These were standing rib sections of beef, Frenched legs of lamb, veal shoulders, and ground beef chuck. Paired sections of the various cuts were used so that they would be as similar in weight and composition as possible.

C. Procedure

Prior to roasting operations, the thermostats of both ranges were carefully calibrated for an average oven temperature of 325 F. During the tests average temperatures in the central part of the oven were continuously recorded. Both ovens were operated for at least one hour, before actual roasting took place, so that equilibrium oven temperature conditions were established before the meat was inserted.

Each section of meat was weighed raw, each roasting pan and each platter was weighed empty. The general roasting procedures followed were those reported in *Meat and Meat Cookery* published by the National Live Stock and Meat Board.

All oven, room, and internal meat temperature thermocouples were connected to a multipoint electronic recorder.

The thermostats were set and kept at 325 F throughout the roasting process.

Roasting operations included: a fully loaded oven of meat loaf; a mixed load consisting of meat loaf, beef rib sections, veal shoulder, and leg of lamb.

In the first operation four ten-pound meat loaves were placed in each oven. Each loaf was placed in a separate pan with two pans on each rack.

As each meat loaf reached the desired internal temperature of 170 F, it was removed from the oven. The loaded pans were weighed immediately. The loaves were then transferred to individual platters and the loaded platters weighed. They were then set aside until the internal temperature of the meat reached a maximum value. Meanwhile the roasting pan plus the drippings were also weighed. When the meat reached a maximum internal temperature, the platter plus the meat was again weighed. From the weight of the platter plus the meat before and after maximum internal temperature rise the volatile loss, during maximum internal temperature rise, could be obtained. The weight of the platter plus the drippings was then recorded indicating the amount of weight lost in drippings during maximum internal temperature rise. The final weight of the meat was then recorded.

The other tests with the mixed loads consisting of meat loaf, Frenched legs of lamb, veal shoulders, and standing beef rib roasts, were conducted employing the same general procedure.

D. Discussion of Results

In order to simulate normal roasting practice employed in commercial kitchens tests were conducted with no adjust-

ments or manipulations of the thermostats after the initial setting of 325 F.

1. Meat loaf—Four 10.00 pound meat loaves were placed in each oven and roasted until each loaf reached 170 F. Significant data recorded during this test are noted in Table 1.

An analysis of the data presented in Table 1 indicates that under the conditions of this test the amount of shrinkage in the gas oven was slightly higher than that in the electric range. However, this difference is not appreciable and therefore the shrinkage was considered essentially equivalent.

2. Mixed meat load—Significant data recorded during this test are included in Table 2.

It appears that there were no significant differences between shrinkage results obtained with meat loaf, lamb, and veal respectively as cooked in the gas and electric ranges. For the beef roasts the shrinkage data were in favor of the gas range by a sufficient amount to be significant. This difference in shrinkage may be partially explained on the basis of the high fat content of the beef. High temperature radiation from the top element of the electric range oven apparently causes a greater loss on a fatty surface than does convected heat.

The difference in degree of the average shrinkage between the two meat loaf tests can be attributed to differences in the meat supplied.

Table 3 shows the volatile and dripping losses of the meats used in the tests.

Part II—Portable Roasting Ovens

In these tests standard deck type portable roasting ovens were employed. The gas oven was equipped with a snap-acting thermostat and operated from full-on to by-pass rate.

The input rate for the gas oven was 38,000 Btu per hour and 21,500 Btu for the electric oven.

The electric oven was equipped with vents which could be manually adjusted at various positions to permit escape of cooking vapors during roasting operations.

Choice grade standing rib roasts of beef were used for all shrinkage experiments. The matched ribs of four animals were employed for each pair of tests; i.e., one test in a gas oven and one

TABLE 1
MEAT SHRINKAGE DATA FOR MEAT LOAVES ROASTED AT 325 F IN GAS AND ELECTRIC OVENS

Range Oven	Meat loaf pan number and location: 1 Upper rear	2 Upper front	3 Lower rear	4 Lower front	Average
Gas					
Final weight, lbs.	8.08	8.11	7.94	7.90	
Weight loss, lbs.	1.92	1.89	2.06	2.10	
Meat shrinkage, %	19.2	18.9	20.6	21.0	19.92
Electric					
Final weight, lbs.	8.15	8.21	8.24	8.02	
Weight loss, lbs.	1.85	1.79	1.76	1.98	
Meat shrinkage, %	18.5	17.9	17.6	19.8	18.45

Internal temperature of meat at start 78 F, when removed from oven 170 F.

TABLE 2
MEAT SHRINKAGE DATA FOR MIXED MEAT LOADS ROASTED IN GAS AND ELECTRIC OVENS

Range	Meat and location: Meat loaf Upper front	Lamb Upper rear	Veal Lower front	Beef Lower rear
Gas				
Initial weight, lbs.	10.00	8.16	15.06	9.76
Final weight, lbs.	8.41	6.28	13.08	8.68
Total losses, lbs.	1.59	1.88	1.98	1.08
Meat Shrinkage, %	15.9	23.0	13.15	11.35
Electric				
Initial weight, lbs.	10.00	7.69	14.62	11.54
Final weight, lbs.	7.91	5.95	12.69	9.35
Total losses, lbs.	2.09	1.74	1.93	2.19
Meat shrinkage, %	20.9	22.65	13.20	18.97

TABLE 3
VOLATILE AND DRIPPING LOSSES

a. Meat loaf

Shrinkage loss, lbs.	Meat loaf pan number and location: 1 Upper rear Gas	1 Upper rear Elec.	2 Upper front Gas	2 Upper front Elec.	3 Lower rear Gas	3 Lower rear Elec.	4 Lower front Gas	4 Lower front Elec.
Volatile, in oven	0.80	0.54	0.65	0.52	0.67	0.58	0.74	0.56
Dripping, in oven	0.96	1.09	1.06	1.02	1.19	1.02	1.17	1.25
Volatile, outside of oven	0.03	0.05	0.05	0.04	0.06	0.03	0.08	0.06
Dripping, outside of oven	0.10	0.14	0.10	0.18	0.11	0.10	0.07	0.08
Total	1.89	1.82	1.86	1.76	2.03	1.73	2.06	1.95

b. Mixed load

Shrinkage loss, lbs.	Meat and location: Meat loaf Upper front Gas	Meat loaf Upper front Elec.	Lamb Upper rear Gas	Lamb Upper rear Elec.	Veal Lower rear Gas	Veal Lower rear Elec.	Beef Lower front Gas	Beef Lower front Elec.
Volatile, in oven	0.57	0.70	0.97	0.96	1.71	1.53	0.51	0.82
Dripping, in oven	0.77	0.95	0.73	0.61	0.13	0.17	0.46	1.21
Volatile, outside of oven	0.06	0.06	0.04	0.04	0.05	0.09	0.05	0.04
Dripping, outside of oven	0.16	0.36	0.10	0.10	0.05	0.10	0.03	0.08
Total	1.56	2.07	1.84	1.71	1.94	1.89	1.05	2.15

TABLE 4
MEAT SHRINKAGE OCCURRING IN GAS OVEN AND ELECTRIC OVEN AT THERMOSTAT SETTING OF 250 F

Roast Number	GAS OVEN Initial Wt. of Roast, lbs.	Per Cent Shrinkage* Drippings In Oven	Drippings Outside Oven	Evaporation In Oven	Evaporation Outside Oven	Total	ELECTRIC OVEN Initial Wt. of Roast, lbs.	Per Cent Shrinkage* Drippings In Oven	Drippings Outside Oven	Evaporation In Oven	Evaporation Outside Oven	Total
1	12.97	2.24	0.46	7.64	0.62	10.96	11.90	1.01	0.50	6.72	0.93	9.16
2	12.25	1.47	0.33	3.43	0.33	5.56	12.69	1.89	0.39	3.71	0.63	6.62
3	8.31	2.05	0.12	5.77	0.72	8.66	11.36	1.49	0.18	2.29	0.53	4.49
4	11.90	3.20	0.50	7.73	0.92	12.35	12.11	1.40	0.74	8.41	0.91	11.46
5	9.81	2.45	0.51	4.07	0.82	7.85	10.41	1.06	0.29	4.80	0.77	6.92
6	14.84	1.68	0.67	4.45	0.81	7.61	12.86	1.71	0.70	5.14	0.93	8.48
7	11.00	1.36	0.46	6.45	0.73	9.00	11.00	0.82	0.73	8.45	1.00	11.00
8	11.38	2.20	0.35	4.66	0.88	8.09	10.78	2.23	0.09	5.40	0.74	8.46
Average	11.56	2.08	0.43	5.52	0.73	8.76	11.64	1.45	0.45	5.61	0.80	8.32

* Losses "outside oven" were those which occurred when roast was removed from oven at end of roasting period and allowed to attain its maximum internal temperature.

test in the electric oven. The two rib sections from an animal were cut into two roasts, making a total of 16 roasts, eight of which were cooked in each oven. Each of the eight roasts in one oven was paired with a roast in the other oven.

A. Procedure

Meat shrinkage experiments were conducted at oven thermostat settings of 250 F and 325 F. Prior to these experiments, each oven thermostat was calibrated for temperature adjustment. Calibrations were made for both the 250 F and 325 F adjustments. Oven temperatures were also recorded during roasting operations by means of the thermocouples.

Before roasts were inserted, the ovens were operated for several hours overnight, to assure an equilbrium temperature condition. During roasting experiments, vents in the electric oven were manually opened just wide enough to prevent condensation of moisture around the oven door. Both top and bottom heating elements were operated at the "medium" setting. This procedure was recommended by the manufacturer.

B. Results

Tables 4 and 5 show the meat shrinkage in the gas and electric ovens for thermostat settings of 250 F and 325 F respectively for each of the eight roasts tested.

In the tests at 250 F and 325 F the average per cent total shrinkage was about the same in both ovens. Trend in amounts of shrinkage which occurred as drippings or evaporation in and outside the ovens was also the same. That is, average loss by drippings in the electric oven was 86 percent of that which occurred in the gas oven, but average losses by drippings outside the oven and by evaporation in and outside the oven were greater in roasts from the electric oven.

As expected, at a thermostat setting of 325 F, roasts from both ovens showed greater cooking losses than those recorded during tests conducted at a thermostat setting of 250 F.

TABLE 5
MEAT SHRINKAGE OCCURRING IN GAS OVEN AND ELECTRIC OVEN AT THERMOSTAT SETTING OF 325 F

Roast Number	GAS OVEN Initial Wt. of Roast, lbs.	Per Cent Shrinkage* Drippings In Oven	Drippings Outside Oven	Evaporation In Oven	Evaporation Outside Oven	Total	ELECTRIC OVEN Initial Wt. of Roast, lbs.	Per Cent Shrinkage* Drippings In Oven	Drippings Outside Oven	Evaporation In Oven	Evaporation Outside Oven	Total
1	12.81	3.98	1.25	8.50	1.09	14.82	14.08	2.06	1.14	8.68	1.28	13.16
2	8.89	4.50	0.68	5.85	1.24	12.27	9.95	3.72	1.10	4.12	0.70	9.64
3	9.61	3.02	0.62	4.57	0.93	9.14	9.52	3.26	0.31	6.41	1.26	11.24
4	11.27	4.00	0.80	7.10	1.07	12.97	13.64	2.86	1.61	9.51	1.17	15.15
5	12.19	5.50	1.48	7.63	1.23	15.84	11.22	3.83	1.25	6.94	1.32	13.34
6	11.13	3.41	0.53	6.64	0.99	11.57	11.63	4.47	1.55	9.90	1.20	17.12
7	13.41	3.87	1.34	6.40	0.97	12.58	10.35	2.99	1.55	8.60	1.45	14.59
8	10.92	6.31	1.10	7.96	1.28	16.65	10.23	6.54	0.98	6.54	1.37	15.43
Average	11.28	4.32	0.98	6.83	1.10	13.23	11.31	3.72	1.19	7.59	1.22	13.71

* Losses "outside oven" were those which occurred when roast was removed from oven at end of roasting period and allowed to attain its maximum internal temperature.

Accidents due to gas cut substantially by higher appliance standards and industry's cooperative efforts

Gas ups home safety record

By C. GEORGE SEGELER

Engineer of Utilization
American Gas Association

The major share of gas is sold by publicly regulated but privately owned utility companies, some of which sell only gas while some sell gas and electricity. A smaller part of the industry, but nevertheless a very important one, is the bottled or LP-gas business. This type of distribution is private business and is not subject to public utility company regulation. As a result of these two branches, gas service is available practically everywhere in the United States.

The latest A. G. A. data shows that there are 24 million utility gas domestic meters which on the basis of the average size family serve 91.2 million customers. In addition there are six million LP-gas customers. With but few exceptions, this large portion of our population have more than one gas appliance. Almost all of them have a gas range and most of them have a gas water heater in addition. Somewhat smaller percentages use gas for heating, refrigeration, laundry drying and incineration. Several of these appliances have more than one main gas burner. There is in total an astounding number of burning flames operating many hours of every day.

Though our subject is home accidents, it is really a remarkable degree of *home safety*, considering the total exposure, which stares us straight in the face.

The National Fire Protection Association annually lists the fire causes by frequency and loss. Gas and gas appliances have been near the bottom of that list for many years. In 1951 they occupied nineteenth place. No small part of the fire safety, and for that matter the general safety which has been built into gas appliances, arises from the establishment in 1925 of the American Gas Association Testing Laboratories which today test and approve better than 95 percent of all domestic gas appliances approved in the United States. All of these Approvals are based upon compliance with American Standards, one set of which covers each individual appliance type. A typical standard such as the Domestic Range Standard is a 50-page booklet with some 500 individual requirements and the test methods to determine compliance.

Evaluating the problem

Now, if this is true, what are the reasons why accidents in the home number about one thousand fatal cases a year and undoubtedly a larger number of non-fatal? It is to this problem that we address ourselves with the hope of making an effective contribution towards lowering the number of accidents. It may be well to begin with a review of the total annual number of fatal accidents over the years.

Table 1 shows the decline in the fatality index due to gas. It also lists the fatal accidents due to utility gas by years. The information is taken from account number E890 (formerly 178-A) of the United States Public Health Service Summaries of Vital Statistics. For comparison as to total magnitude the table also shows the 1948 and 1949 data from account number E914 which covers the accidents caused by electric current. It is of interest to observe that electric accidents, for the most part, occur in industry and along the electric transmission and distribution system, while the accidental deaths due to gas generally occur in the home. Chart 1 (page 45) expresses the gas fatalities as a rate per billion therms per year of domestic gas sales. Since domestic gas sales serve as one measure of exposure to gas and have been growing rapidly, there has been a steady decline in the gas fatality index.

The second general picture that should be kept in mind is a little harder to portray in a simple table but its implication is easy to follow. This is, that the accidents due to gas are not spread uniformly across our country proportional to the number of gas meters in any locality. Far from it. There is a very uneven distribution of accidents and this is one of the striking features of the problem. Perhaps the easiest way to illustrate this is to review the accidental deaths by gas per million domestic meters by regions. The year 1946 in which there were 1043 gas fatalities has been studied in this manner as shown in Table 2.

The over-all rate was 54.2 per million domestic meters in the United States. Although the rate in the individual regions will vary from year to year the table does illustrate how very different this problem is in different regions. An even greater contrast exists in cities. The problem can and probably should be broken down into still smaller sub-divisions than

Abridged version of an address before the National Conference on Home Accident Prevention, Ann Arbor, Michigan, January 21, 1953, sponsored by U. S. Public Health Service, National Safety Council, American Public Health Association and School of Public Health, University of Michigan.

whole cities when preparing specific programs.

Fuel gases used in the home can be divided into two general types for this discussion, the toxic and the non-toxic gases.

In 1942, 57 percent of the residential customers of the gas industry were served with gases containing carbon monoxide. Today only 27 percent of the residential customers receive gas containing carbon monoxide. This fact is of importance when considering the hazard of unburned gas, that is gas which is entering the premises from leaks in piping and accessories or from burners which have become extinguished. Where the gas is toxic, a potential asphyxiation hazard is soon present. If the gas is non-toxic such leaks or outages do not present an immediate hazard, although if continued long enough, all gases introduce hazards of explosion and fire.

The much higher rates recorded from certain regions corresponded to the predominant use of manufactured gases. As soon as a new regional study can be completed in terms of 1953, a very much improved picture will be developed because of the rapid swing to natural gas which is non-toxic and contains no CO.

The gas industry made a notable contribution when the American Gas Association Laboratories in Cleveland and Los Angeles were established to test all models of gas appliances for compliance with established American Standards on absence of CO in the products of combustion. All of the individual appliance requirements have such provisions. They are not identical for each appliance group. The general level of permissible CO is two parts in 10,000 when the actual flue gas analysis is recalculated to an air free basis, a step whose effect is to stiffen the test. A digression appears in order to emphasize that two parts in 10,000 in the air free products of combustion does not mean that the room air will approach anywhere near such a concentration, low though it is, because of dilution and air infiltration. In addition, this air free percentage limitation must also be met when the pressure is ½ to 1½ times normal gas pressure.

With all this initial safety built into an appliance why is it that incomplete combustion occurs occasionally in the field? There are three possible causes and each deserves some consideration.

In the first and simplest case, the air shutter of the burner is not correctly adjusted or is clogged, although the gas input is correct; or where the gas input is too high and no air shutter adjustment will take care of it.

In the second case, the appliances are in a location having an insufficient air supply, that is not enough infiltration of air through cracks around doors and windows or from other sources.

In the third case, a flue is stopped up or defective for some other reason. This may be a flue within an appliance or it may be the actual building chimney flue. The failure of the latter is a relatively rare occurrence and in general appliances which are properly connected to chimney flues will not cause hazards even if something should go wrong with the chimney itself. That is because gas appliances are required to have draft diverters or hoods to permit flue product spillage in case of chimney flue trouble. Therefore, it is comparatively rare to find a properly installed water heater or house heater involved in an asphyxiation accident.

In appraising the importance of appliance corrosion as a factor it is essential to keep in mind that appliances differ widely between models and makes as to the likelihood of corrosion products choking a flue and actually falling down in such a way to interfere with flames. The internal design of an appliance, therefore, is an important consideration. This is now fully understood by the American Standard Approval Requirements Committee, and future standards will reflect such considerations.

Natural gas is usually free from sulphur. Small traces may be present due to the odorants which are added to aid in leak detection but not enough to cause difficulties. The combustion of natural gas produces relatively little or even no rust, scale and metallic salt accumulations such as were found in New York refrigerators. These facts are recognized in the American Standard Approval Requirements. For example, the Warm Air Furnace Standards require a clean-out panel for furnaces intended for manufactured gas but do not require one for natural gas. In fact, for manufactured gas territories complete access to all parts of the heating section is necessary for periodic cleaning. Appreciation of such factors helps in understanding why the experiences in one community may present a completely incorrect picture as to what is likely to take place in a neighboring community. The study of home accidents from gas is essentially a local problem. There is an even greater contrast between cities than there is between regions.

Local studies can easily be made to determine if improvement is possible. Then the next step is to pinpoint the part of the city in which the accidents occur. By working closely with the utility

(Continued on page 45)

TABLE 1
DECLINE IN GAS FATALITY INDEX

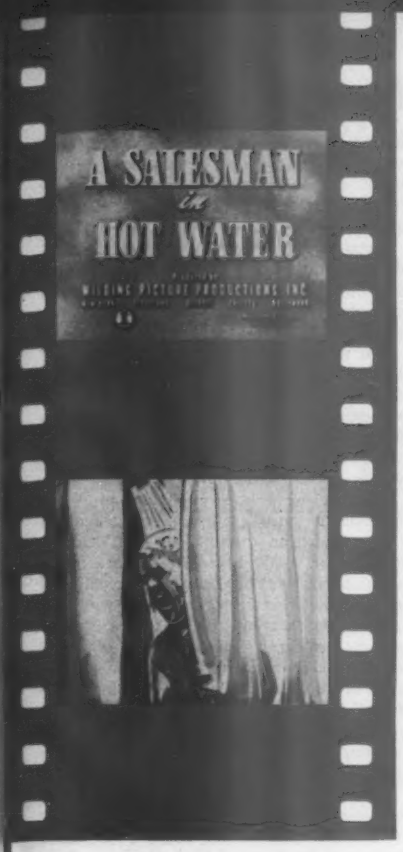
Year	*Millions of Meters	*Billions of Therms	Accidental Deaths From Gas	Accidental Deaths Per Million Meters	Accidental Deaths Per Billions of Therms
1943	17.84	7.001	1123	62.9	160
1944	•18.32	7.312	1076	58.3	147
1945	18.61	7.749	1273	68.4	165
1946	19.16	8.482	1043	54.4	123
1947	19.84	10.086	1009	50.9	100
1948	20.56	11.153	†1095	53.2	90.5
1949	21.26	11.828	† 967	45.5	81.8
1950	22.15	13.839	1012	45.7	73.1

* Residential Customers. (Does not include LP-gas meters.)

† For comparison account No. E914, "Accident Caused by Electric Current," indicates 871 deaths in 1948 and 1,046 deaths in 1949.

TABLE 2
ACCIDENTAL FATALITIES PER MILLION DOMESTIC GAS METERS—BY REGIONS

Region	
United States	54.2
New England	91.5
Middle Atlantic States	85.3
South Atlantic States	63.8
Pacific States	60.8
Mountain States	31.8
West North Central States	25.8
East North Central States	24.4
East South Central States	24.4
West South Central States	15.8



Films spark water heater sales

Companion sound motion picture films that work together to increase the sales of water heaters have been produced by John Wood Company of Conshohocken, Pennsylvania and Chicago.

One of the films, "Servants on Tap," is designed to convince home owners of the superiority of automatic gas water heaters as a means of providing their households with adequate hot water. The other film, "A Salesman in Hot Water," effectively demonstrates that sales can be made only by active, two-fisted selling.

Photographed in color and staged in well designed home and office settings, each film carries audiences smoothly through the development of its central theme. With a light touch, and often using humorous situations to emphasize sales points, the films highlight the advantages of gas hot water heaters. To judge by consumer reactions to "Servants on Tap," its subtle presentation of sales points has proved effective. Though it avoids use of a hard-selling commercial story, the film succeeds in its effort to sell the comfort and convenience of modern automatic hot water service.

The second film, "A Salesman in Hot Water," is designed as a companion piece for showing to appliance sales departments and to plumber-dealer groups. This film uses the action in the first film to highlight the need for all-out selling of appliances.

Introduced at the A. G. A. Annual Convention, Atlantic City, October 27-30, the new John Wood films are now being incorporated in the hot water sales programs of many gas companies.

Both "Servants on Tap" and "A Salesman in Hot Water" are available for showings by arrangement with the local John Wood sales representatives. Their use is not restricted to gas companies that handle the John Wood line.

A.G.A. Corporate Secretaries Committee meets in New York

In attendance at the meeting of the A. G. A. Corporate Secretaries Committee, New York, January 19-20 were: R. E. Palmer, Consolidated Natural Gas Co.; R. M. Drevs, The Peoples Gas Light and Coke Co.; B. H. Harper, Northern Natural Gas Co.; Kurwin R. Boyes, A. G. A.; Dale Parker, The Columbia Gas System, Inc., chairman; L. Lester Schlosser, Michigan Consolidated Gas Co.; R. B. Loomis, The Brooklyn Union Gas Co.; M. J. Coughlin, The Hartford Gas Co.; and Roy L. Thomas, Colorado Interstate Gas Co. During the two-day session, plans were laid for the expanding activities of the Committee

THE CORPORATE SECRETARIES Committee, A.G.A., held its first meeting in New York City, January 19-20, 1953. Dale Parker, secretary, Columbia Gas System, Inc., and chairman of the committee, presided at the meetings in the offices of that firm.

The chairman pointed out that while the national organization, The American Society of Corporate Secretaries, Inc., deals with problems of industry in general, the A.G.A. committee will confine its endeavors to the problems of corporate secretaries of the gas industry. He reported on the formation of three subcommittees to study specific problems. One of these, the Corporate Records Subcommittee, headed by R. M. Drevs, The Peoples Gas Light and Coke Co., Chicago, will examine problems dealing with the preparation and maintenance of corporate records and documents. The Corporate Regulations Committee, with M. J. Coughlin, The Hartford (Conn.) Gas Co., as chairman, will study problems met in dealing with regulations of the Securities and Exchange Commission, the stock exchanges and other regulatory bodies. The third group, the Stockholders Relations Committee, will study problems of secretaries in dealing with corporate stockholders. Tom H. Wheat, Transcontinental Gas Pipe Line Corp., Houston, is chairman of this subcommittee.

B. H. Harper, Northern Natural Gas Co., Omaha, was elected vice-chairman of the committee. He pointed out that since the duties of corporate secretaries varied greatly in different organizations, he believed the duties of such executives in the gas industry should be catalogued so that the greatest benefit could be derived from the work of the A.G.A. committee. It was agreed that a questionnaire should be prepared and results tabulated.

The Stockholder Relations Subcommittee is making a comprehensive study of gas company annual reports to determine whether a model annual report can be developed for the gas industry. Interim reports to stockholders also will be analyzed.

Contacts established by the Corporate Regulations Subcommittee will screen regulations issued by federal and state bodies for items of particular concern to gas company corporate secretaries.

The report of the Corporate Records Subcommittee launched a discussion of methods for retaining and disposing of records. Microfilming processes and isolated locations for preservation of duplicate records were discussed as means of emergency preservation of records. This subcommittee will also make a study of the policies and practices of gas companies regarding corporate contributions.

At a luncheon meeting, E. K. Thompson outlined the comprehensive plan used by his organization, Merrill Lynch, Pierce, Fenner and Beane, brokers, to cooperate with corporations in securing proxies from customers who are beneficial owners of stock registered in the broker's name. One afternoon was devoted to a demonstration of the Columbia Gas System's machine method of stockholder accounting and dividend disbursement. This completely mechanized plan for taking care of nearly 84,000 stockholders was highly praised.

Members of the committee participated with the New York group of the American Society of Corporate Secretaries, Inc., at a dinner meeting at the Harvard Club. Professor Pearson Hunt of the Harvard Graduate School of Business Administration spoke on "Stockholder Relations."

Because of the success of the luncheon meetings for gas company corporate secretaries held at the last two A.G.A. conventions, it was agreed that another such luncheon should be held at the 1953 Convention in St. Louis, October 26-28. A meeting of the full committee will be held May 14 and 15, 1953, at the new office building of the Northern Natural Gas Co., in Omaha, Nebraska. Subcommittees will submit progress reports and plans for the convention luncheon will be discussed at this meeting. The new corporate records plan of Northern Natural will be demonstrated during the meeting.

FPC okays building more gas distribution facilities

THE FEDERAL POWER Commission has authorized more construction to expand the facilities of the nation's natural gas utilities and distributors.

The Iowa-Illinois Gas & Electric Co., Davenport, can now proceed with its plans to build a 22-mile natural gas pipeline in Iowa. Total estimated cost is $500,000.

New York State Natural Gas Co., Pittsburgh, has been authorized to build its proposed 18-mile line in Pennsylvania's Clinton and Cameron Counties. New York State Natural has withdrawn without prejudice an application to build 75 miles of 20-inch pipeline in Armstrong County during 1953.

Texas Eastern Transmission Corp. and **Wilcox Trend Gathering System, Inc.**, will build 157 miles of pipeline in Texas and Louisiana to replace diminishing gas supplies in Louisiana. The project will cost approximately $10,500,000, and will include about 50 miles of laterals, a 2,200 horsepower compressor station, metering and regulating facilities.

Panhandle Eastern has been authorized to construct a 23-mile line and a 330 horsepower compressor to augment the capacity of its Peoria (Ill.) lateral. The project will cost $1,009,000.

The commission has authorized two important rate changes, as well.

Southern Counties Gas Co. of California's $495,000 increase in wholesale natural gas rates became effective on January 1. The increase is subject to a $50,000 bond which was posted with the FPC, and is subject to refunds of any amounts subsequently disallowed by the commission. The increase applies only to San Diego Gas & Electric Co., Southern Counties' only wholesale interstate customer.

The Manufacturers Light & Heat Co., Pittsburgh, was granted a $2,200,000 increase in wholesale natural gas rates, subject to a $200,000 bond.

Common sense applied to the inherent strength of the economy of our country can nullify the expected recession

The outlook for business

By DR. MARCUS NADLER

At the present time many business men all over the country are wondering what is ahead of us. We have had a boom for twelve years and we now hear that boom is coming to an end. There are many who believe that another depression is in the offing.

While I don't know what the future holds in store for us—and nobody knows—and it may be just as well that we don't know what tomorrow may bring—I believe if we analyze all the forces which operate in our economy today, we will be able to get a good answer without indulging in too much wishful thinking.

The best way to start off is to ask ourselves these questions: Where are we? Where do we go from here? What is the long range outlook?

Today business is at a high level. We are in the midst of great prosperity. No matter how you measure prosperity, you find that today we are more prosperous than we were before. The national income is larger than ever before in peacetime; disposable income is greater than ever before; wages are high and unemployment is at a very low level. The reasons for this prosperity are well known. Military expenditures are large and are steadily increasing; capital expenditures are large and are steadily increasing, and probably this year will reach a new peak. We all know that our government is spending a great deal of money abroad.

The construction industry is very active; the soft goods industries have come out from a serious depression. Farm income and farm prices are being maintained. Under all those circumstances, it is no wonder that business is good.

But—how long will it last. Again I don't know and nobody knows. It seems to me that sometime in the next few months—whether it be six months or nine months or more—nobody can determine it—a downturn in business is bound to take place for these reasons:

1. Military expenditures will reach their peak around the middle of June and will level off. They will not increase any more according to present plans.

2. Capital expenditures are bound to decline moderately. Since the end of the war, huge amounts of capital expenditures have been made by American industry to enlarge and modernize plants and equipment. That cannot go on indefinitely, and therefore sometime in 1953 a decline in capital expenditures is expected.

3. The productive capacity of our country is very great. At the end of 1952 the productive capacity of the country will be 50 percent greater than at the end of 1945 even though at the end of 1945 the productive capacity of the United States was the marvel of the world. Competition at home is bound to increase.

4. Competition from abroad is bound to rise. Europe, and particularly West Germany, has made rapid strides in the last few years. The same is true of Japan. Costs of operations are much lower in those countries. In Germany, for example, a worker works 48 hours a week at 40 cents an hour, and given the same machinery that we have in the United States, he is just as efficient in his production as an American worker. There will be European and Japanese competition in the world's markets and this will be felt in our economy.

The pent up demand for all kinds of goods created during the war has about come to an end. From the end of the war up to the present time, we have been working to fill an economic void created during the war. No homes were built during the war—no durable consumer's goods were available to any extent. Now the housing shortage is rapidly disappearing. By next year family formations will be much smaller than during the past few years. The demand for homes, therefore, is bound to decline and it will be smaller in 1953 than it was in 1952, 1951 and 1950.

If we consider all these forces together, one can conclude that some time in 1953 or maybe in 1954—when, nobody can tell—a decline in business activity is likely to take place.

However, the real question before us is this. What kind of a decline will it be? Will it be a moderate readjustment as occurred in 1948 and 1949 which lasted only about nine months, or will it be something more serious, comparable to the sharp decline which occurred in 1937, lasting until the outbreak of the war? Then the decline was indeed very serious.

There are some who believe that a decline, when it comes, may be a real postwar depression, which has followed after every major war and after every major period of inflation.

In order to find an answer to this question, therefore, I believe the best thing to do is to analyze the economic forces operating in our economy and determine what conclusions we can reach.

In the past, every major war was fol-

Presented by Dr. Nadler as a speech at the A. G. A. Convention in Atlantic City, October 29, 1952 under the auspices of the Accounting Section.

Purchasing and Stores Meeting set for April 13-15

● Those interested in procuring, storing, handling, and accounting for materials should be in Milwaukee on April 13-15 at A. G. A.'s Purchasing and Stores meeting.

Speakers will tell of a purchasing department operating manual, standardization of materials, a report on standardization of materials in some gas companies, a standard packaging report, and unusual applications of material handling equipment.

A place to ask questions and help to answer others' questions will be in the discussion session on purchasing, stores and related accounting problems. A. O. Smith Corp. has extended an invitation to see their pipe mill.

Sponsored yearly by the Accounting Section, the meeting attracts those concerned with all phases of materials used by the gas industry.

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lowed by a great boom; it was followed by a very sharp increase in prices of commodities, which is called inflation. Once the forces of inflation ran their course, there was a sharp decline in business activity accompanied by large scale unemployment, and accompanied by a sharp decline in prices of commodities.

Now, for your industry, which has spent huge sums of money during the last few years in developing the gas resources of the country, building very costly pipelines and distribution facilities, the general outlook for business, particularly the movement of employment and commodity prices, is of the utmost importance.

Is inflation permanent?

If one should be able to make a good case that present commodity prices are only temporary, and that commodity prices will decline sharply, then you may not have very much of a chance of asking for an increase in your rates which you charge for your product. If, on the other hand, it should be possible to demonstrate without any wishful thinking that the present level of commodity prices is here to stay—that inflation has been built in on a permanent basis, then your cases before courts and commissions will be entirely different.

It is true that history and past experience favor a sharp decline in business activity. We had that after World War I. However, I do believe, and I shall attempt to prove in a few moments, that a decline in business activity such has occurred in the past; a depression of the magnitude that occurred in 1937—a depression such as that which occurred in the early thirties—not only is unlikely, but one may say that it cannot take place and will not take place. And it might be added that while commodity prices will fluctuate, they will remain high and that the inflation which has taken place during the last six years is more or less of a permanent character.

The reasons for that conclusion briefly are these:

1. The change in population trends. Up to a few years ago the general belief prevailed in the United States, based upon statistics and careful study, that around 1975, the population of the United States would reach its peak, level off and then decline. That has been completely disproved. During the last decade the population of the United States increased by nearly 20 million and in all probability during the present decade the increase in population will be equally as great—if not greater. The previous speaker referred to the fact that people live longer today and that is true. There were in 1950 45 percent more people in the age group of 65 and over than ever before, therefore there is a hope that women will not be widows at 60, but rather at 65. The span of life is continually lengthening.

What is more important is the fact that in 1950 we had 56 percent more children in the age group of five years and younger than we had in 1940. In 1951 three and one-half million babies were born—three and one-half million potential customers of the gas industry.

Not only was there an increase in population, not only is the family concept undergoing a great change, but also there is a great shift in population. There have been geographical shifts to certain parts of the country—to the west and to the southwest.

The country is in the midst of a great decentralization movement from large cities to various suburban communities. These developments are bound to have a permanent effect upon the economy of our country.

2. The standard of living of our people has gone up. While it is perfectly true, as indicated by a previous speaker, top executives today have less take home pay than they had ten or twenty years ago, the great majority of American workers—workers in your industry and workers in all industries all over the land, and the farmers, enjoy much higher standards of living today than ever before. As the standard of living increases, it creates new demands for commodities, for new services and an entirely different way of life.

The increase in the standard of living of our people is a dynamic force which is bound to have an impact upon the economy of the country.

3. We are living in a period where obsolescence is bound to play a much more important role than in the past. All of us know that the cost of doing business is high. Money and wages are higher, and a decline in money and wages is not in the making. Therefore, every industry in the country will endeavor to operate at a low cost. That means that huge investments in new plants and equipment will have to be made. The depreciation on plants and equipment put into place since the end of the war is bound to increase, thus in part furnishing business concerns the means to pay for the new installations. Therefore, we can expect for an indefinite period of time a demand for new machinery and new labor saving devices.

4. We are living today in a revolutionary period where new products are being created destroying the value of older ones. We are living in a great chemical revolution. Today most men are not wearing wool or cotton—they are wearing all kinds of synthetic fibres. All kinds of inventions and developments are taking place, which will reduce the value of old products. That is continuing at a tremendous pace.

5. Whether we like it or not, it is a fact that the defense expenditures of the United States will continue to be larger than in 1948-1949. Then the total military expenditures for the country amounted to fourteen billion dollars. There isn't a young man or woman who will live to see the day when military expenditures will be less than 25 billion

(Continued on page 43)

Competitive challenges for the volume cooking and the industrial processing loads are being recognized and met

Map plans to broaden gas use

TERRY HART, *CHAIRMAN* · CHARLES C. EELES, *VICE-CHAIRMAN*

A year of constructive activity in all the facets involving the utilization of gas fuel in industry and commerce is planned for the A. G. A. Industrial and Commercial Gas Section.

The main objective in the commercial field is to meet the challenge for the valuable gas cooking load, and this comes under the jurisdiction of the Food Service Equipment Committee, R. S. Chapman, chairman, Atlanta Gas Light Co., and its related subcommittees. This committee plans the promotional programs and assists the staff in developing programs such as the "Proof of Profits" Commercial Gas Cooking Sales Campaign scheduled to start in the early fall.

The Equipment Improvement Committee, L. J. Fretwell, chairman, Oklahoma Natural Gas Co., Tulsa, is working toward having more commercial gas cooking equipment approved and to promote the greater use of automatic oven ignition.

A new committee in the commercial field is the Special Committee of Sales Executives whose objective is to arouse the interest of company management so that they will allocate money for the promotion of gas cooking. Gordon M. Jones, United Gas Improvement Co., Philadelphia, is chairman of this committee. It is further desired to bring to the attention of sales managers that about 10 percent of the gas company load is from commercial cooking and that this revenue shows the greatest percentage of profit. Because the volume of the business of none of the commercial appliance manufacturers is great, advertising and promotion will have to be done largely by the gas industry.

Terry Hart, general sales manager, Nashville Gas Co., and chairman of the A. G. A. Industrial and Commercial Gas Section, heads that group's 1953 program, while Charles C. Eeles, district industrial sales manager, The Ohio Fuel Gas Co., is vice-chairman

There are important applications of commercial gas other than cooking which the Commercial Processing Committee, D. M. Barrett, chairman, Washington Gas Light Co., will investigate and report. The subcommittee on Volume Water Heating will give attention to submerged coil heating. The other related subcommittees will make studies of retail baking with particular reference to reel ovens; the upgrading of small boiler installations and the promotion of summer air conditioning for commercial establishments, will occupy the time of other subcommittees.

A great interest is being shown in the industrial gas field and for many reasons. One is because the use of gas in industry affects not only every single thing we use, but has a direct bearing on many of the components that go to make up the thousands of consumer items. Another reason is, that anything that affects industrial gas affects the labor force. The slightest curtailment of gas to industry makes for immediate unemployment and so spreads its effect throughout a community like a spider web. While this situation is not common throughout the gas industry, it does exist occasionally, and then due to causes beyond the control of the local gas companies. The Industrial Gas Study Committee, George A. Uhlmeyer, chairman, Iowa-Illinois Gas & Electric Co., Rock Island, Ill., was set up to investigate and suggest remedies for the unfavorable reputation that industrial gas has been acquiring in some areas as a result of service interruptions.

The long-established Metals Committee, K. I. Robinson, chairman, Public Service Electric & Gas Co., Newark, N. J., will continue its study of new metals and new processes for material to

The Managing Committee laid 1953 plans at a mid-November meeting. Section Chairman Hart presided

The Commercial Processing Committee, D. M. Barrett chairman, will study additional commercial gas uses

The Metals Committee, of which K. I. Robinson is chairman, will study and report new metals and processes

The Food Service Equipment Committee, under Chairman R. S. Chapman, is planning promotions in the commercial gas field

be published in the *Information Letter* for distribution to the section members. It was decided at a recent meeting of this committee to meet the problem of increasing the use and knowledge of industrial gas and industrial gas equipment in technical schools through securing the installation of more gas-fired equipment in engineering and metallurgical laboratories. Included in the project is the making of past copies of the *Information Letter* available to the technical schools.

One of the newer postwar committees is the Industrial Gas Practices Committee. From its inception and until he was elected section vice-chairman this committee was headed by Charles C. Eeles. During those few years the committee published several *Information Letters* which have added to the wealth of reference material available to industrial gas men. For the past year this committee has been drafting a code on piping and installation of industrial gas equipment. This work will take considerable time to bring to completion and it is now being pursued diligently by the committee under the new chairman, E. L. Spanagel, Rochester (N. Y.) Gas & Electric Corp. The code entitled: "Standard Installation of Consumer-Owned Gas Piping and Gas Utilization Equipment on Industrial and Commercial Premises not covered by A.S.A. Z21.30-1950," and which will be brought to completion will be so written that it may eventually become a companion piece to Z21.30.

Study industrial uses

A most active group of the section is the Industrial Processing Committee, Everett V. K. Schutt, chairman, Central Hudson Gas & Electric Corp., Newburgh, N. Y., and its five subcommittees. They cover a vast segment of industry that touches most every manufactured product. The new industries which produce plastics and synthetic fabrics have drawn upon the gas industry for a major source of raw material. The base of these new products, or at least of the compounds from which the ultimate product is formed, is natural gas. The Chemical Processing Subcommittee is making a study of the vast petrochemical industry with a view to advising the gas industry how it may cooperate further in this field and what equipment is used for the several stages of this chemical processing.

The other subcommittees are making similar investigations in the spheres of

action indicated by their titles and will from time to time publish Information Letters on the specific applications which have been their subjects of study.

Of immediate interest to MONTHLY readers are the current reports of the Programs and Papers Committee, F. T. Brooks, chairman, Philadephia Electric Co. in which the program for the Sales Conference is outlined. Then the report of the Sales Training Committee, W. D. Relyea, chairman, Public Service Electric & Gas Co., Newark, N. J., where the first announcement of the 1953 Industrial Gas School is made.

Within a few weeks the Committee on Displays at National Expositions, Lee Corn, chairman, The East Ohio Gas Co., Cleveland, will meet to assign space for the Restaurant Show. It will meet again, later in the year to assign space in the Metal Show and the Hotel Show. These shows are of major importance to the industrial and commercial gas men whose everyday work takes them into the field for contact with their customers.

It is believed that the activities proposed, and many of which are already under way, provide an aggressive, constructive promotional sales and educational program for the industrial and commercial phases of our nationwide gas industry.

Mid-April Sales Conference being held in Philadelphia

The 1953 A. G. A. Sales Conference on Industrial and Commercial Gas will be held April 13, 14 and 15 at the Hotel Warwick, Philadelphia. Following an established custom of the past few years, the three-day conference will be divided into separate sessions for industrial and commercial gas subjects with a day in between for a general session. At this year's conference it is the turn for the commercial gas session to be the opening day. The Programs and Papers Committee, F. T. Brooks, chairman, has arranged the entire conference program and selected the subjects and speakers.

No committee meetings are to be held during the sessions at this conference, in accordance with the decision of the Managing Committee. It has been suggested that committee meetings on the commercial phases be held the day before the conference opens and those committees covering subjects relating to industrial gas meet the day after.

Present at the December Programs and Papers Committee meeting to arrange the Sales Conference program were S. P. Rogers, Baltimore; D. A. Campbell, Rockford, Ill.; R. S. Wenner, Columbus, Ohio; F. T. Brooks, chairman, Philadelphia; M. A. Combs, A. G. A.; H. A. Sutton, Newark, N. J. and John Black, Allentown. An advance program will be sent out a month before the conference

The Program Committee, keenly aware of present gas industry problems in both the industrial and commercial fields, has selected timely subjects of interest to all gas men. While the exact titles of talks and papers have not been determined, nevertheless the topics decided upon now will make up the conference program. A fully detailed advance program will be sent out approximately a month before the conference giving titles and speakers together with all pertinent information regarding registration, hotel reservations and social events included in the program.

Pending the mailing of the advance program, the Spring Sales Conference will be as follows:

Monday, April 13, Commercial Gas Day: 1. A talk about the new deep fat fryers, their speed and the sales opportunities they offer; 2. A restaurant operator will be asked to tell what is good and what is wrong about gas and competitive cooking equipment; 3. A real sales talk to include promotion of the efforts to have customers select the best equipment —A. G. A. approved equipment; 4. What the dealer thinks of a "Proof of Profits" campaign; 5. In the form of a panel discussion, several men from different sections of the country will tell about noteworthy commercial processing operations in their respective areas; and, 6. Another panel discussion will cover the subject of automatic lighting of commercial equipment.

Tuesday, April 14, General Session will be devoted to: 1. The aims of industrial and commercial gas advertising and publicity; and, 2. The future of industrial gas.

Between the morning and afternoon sessions there will be the presentation of the Hall of Flame certificates and the usual formal luncheon at which an officer of the American Gas Association has been invited to speak. The afternoon session will continue with talks devoted to: 3. Commercial gas cooking promotion; 4. The importance of the selling job; and, 5. An inspirational address by a master salesman.

At the Wednesday, April 15, Industrial Gas Day audiences will hear talks devoted to: 1. What the GAMA, Industrial Gas Equipment Division "Code of Ethics" means; 2. Industrial gas furnaces as production tools; 3. The fast growing process of spray drying is a natural for gas fuel and its use should be expanded; 4. The wide field for heat applications in the chemical industry; 5. Industrial gas equipment service as a sales aid, from both the gas company and manufacturer viewpoint; and, 6. Gas applications in the glass industry.

The committee has arranged to have all papers on the special Commercial and Industrial Gas sessions presented within an allotted period leaving a specified time for discussion from the floor. It is

thought that by scheduling discussion periods after each talk, greater benefit will be derived from the talks and a better understanding of the subject will result.

There is a real selling job to be done now on industrial and commercial gas and it should be to the interest of every gas man to attend this 1953 conference to sharpen his own sales tools so that he may be the more successful in his efforts to maintain the trend to gas and help customers realize the utmost benefits from the ideal fuel for all purposes wherever heat is required.

Industrial Gas School convenes May 4 in Detroit

The program of the 1953 Industrial Gas School was set up during a meeting of the Sales Training Committee, attended by L. R. Foote, Yonkers, N. Y.; L. E. Biemiller, Baltimore; A. D. Wilcox, Rockford, Ill.; W. D. Relyea, chairman, Newark, N. J.; M. A. Combs, A. G. A.; Lee Corn, Cleveland; and R. L. Melaney, Pittsburgh. Details of the school will be sent member companies in March

Once a year the Industrial and Commercial Gas Section through its Sales Training Committee of which W. D. Relyea, is chairman, sponsors a school for the newcomers to the gas industry and as a refresher course for more experienced industrial or commercial gas men.

Alternating each year between industrial and commercial gas, the 1953 program calls for an Industrial Gas School which will be held in Detroit the week of May 4. Here is a golden opportunity for industrial gas engineers to avail themselves of a course in the fundamentals of gas and its varied applications throughout industry.

One of the students attending the first school of this series in 1947 said: "I am certainly grateful to the American Gas Association for this school which I know has provided the ways and means for men like myself to get much needed basic training. If I say it is the greatest and most worthwhile activity ever undertaken by A. G. A. I am not only expressing my own thoughts but the collective opinion of all those attending the school. I will do it all over again if given the opportunity."

That was six years ago and the Industrial Gas Schools held since then have had not only their complement of junior and senior gas engineers but "repeaters" as well. Only words of praise have been heard from those attending the schools.

Continuing the high caliber of instructors serving at past schools, the 1953 Industrial Gas School to be held in Detroit will see industry leaders again taking their place on the platform to impart their specialized knowledge to the group before them.

A complete program and outline of the course, together with information on registration and hotel accommodations, will be mailed to member companies approximately six weeks in advance.

Sales executives are urged to plan now to send industrial gas men to this popular school. Industrial gas men will appreciate the value of this opportunity to brush up on the latest in industrial gas applications and equipment.

LPGA opens East Central District office

LIQUEFIED PETROLEUM GAS Association has established a new district office in Harrisburg, Pennsylvania. The branch will be located at 2501 North Front St., with William H. Plank in charge as district secretary.

The new office will serve the states of Pennsylvania, New York, New Jersey, Maryland, Delaware, Virginia and West Virginia. It is the seventh regional branch to be formed by the national trade association. Others are located in Wichita, Sacramento, Denver, Boston, Atlanta and Chicago.

Mr. Plank, formerly an LP-gas appliance dealer in Hollidaysburg, Pa., has been secretary-treasurer of Penna. LP-Gas Association.

IGT offers accelerated fellowship program

THE INSTITUTE OF GAS Technology announces the availablity of 15 fellowships for 1953. The fellowships lead to the degrees of Master of Science in Mechanical Engineering or Chemical Engineering, Master of Gas Technology or Doctor of Philosophy.

The Master of Science curricula are additions which will accelerate the fellowship program to enable the student to earn a master's degree in about 15 months. Previously, it required two years, the time still required for the Master of Gas Technology degree.

All fellows are enrolled in and receive degrees from the Graduate School, Illinois Institute of Technology. In addition to tuition and fees, fellows receive a graduated stipend while in residence to cover living expenses.

Applications are invited from seniors and graduates in chemistry, physics, and in chemical, mechanical, natural gas and petroleum engineering who have earned places in the upper quarter of their classes, who are U.S. under 28 years of age. Applicants must show qualities of adaptability, cooperation and high moral character.

Only mechanical or chemical engineering graduates of accredited colleges are eligible.

Applications and further information may be secured from college placement directors; local gas company personnel managers; or the director, Institute of Gas Technology, 17 West 34 St., Chicago 16.

Manipulative method readily coordinates network analyzer to solve gas distribution and flow pressure problems

Simplify analyzer adaptation

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The engineering of gas distribution networks sometimes requires the determination of flow and pressure relations in complicated multipipe networks. Problems of this sort arise when low pressure conditions are to be corrected, new loads are to be added to existing systems, or new construction of pipeline facilities is anticipated. In order to keep construction costs at a minimum while providing the best possible service improvements, the system design engineer may be faced with the pre-determination of distribution system performance for each of several system changes. In the case of a complicated pipe network, such determination may require a great number of manhours and may become prohibitive when an attempt is made to correlate engineering with an existing construction schedule.

The design of an electric power distribution system incorporates many of the features of gas distribution system design. Many electric distribution systems are made up of networks which appear, when laid out on a map, similar to the layout of gas distribution systems. The electric power engineer solves most of his problems of flow and voltage distribution in complicated electric networks by means of electric network analyzers. These analyzers, on which the system is set up in electrical miniature, have been developed to provide ready manipulation and high accuracy. They are built by several different manufacturers and are available at many locations throughout the country. Because of the similarity of the gas and electric problems, it is reasonable to expect that electric network analyzers might be adaptable to the study of gas flow and pressure relations in complicated gas distribution systems.

A technique has recently been developed at Purdue University whereby it is possible to make use of a conventional a. c. or d. c. network analyzer in the solution of fluid-flow problems involving complicated pipe networks. This method requires a very limited amount of preparatory slide rule computation. Once the problem is set up on the analyzer, adjustments are made, using a visual indicator, and final pressure drops and gas flows are read directly by means of the analyzer instruments. The method requires a few pieces of easily constructed, auxiliary equipment not ordinarily built into a conventional analyzer. The accuracy attainable is dependent principally on the accuracy of the analyzer components and metering equipment and is comparable to that attained in electric distribution problems. The procedure is particularly attractive on problems involving a large number of pipe sections and loads. Solution of such problems is limited only by the size of the anlyzer.

Several previous investigators have reported methods by which electric network analyzers may be adapted to gas distribution systems calculations. (See bibliography references 1, 2, 4, 5, 6 at end of article.) One investigator developed a type of analyzer in which the component parts are specially designed to give voltage and current relations corresponding to the pressure and flow relations in water pipes. (Bibliography 3.) This particular type of analyzer is useful in fluid flow problems only and hence any capital investment charges must be justified on the basis of reduced costs in solving gas or water distribution problems. Because of the considerable cost involved, in the purchase and operation of network analyzers, it seems most attractive to adapt to the study of gas flow problems the existing analyzers used by electrical engineers. Previously described methods of using the electrical engineers' analyzer for such problems have required repeated readings and calculations intermediate to the final determination of pressure and flow. The method of adaptation developed at Purdue University is purely manipulative and requires no intermediate readings or calculations previous to those indicative of flow and pressure in the pipe system. Although the method as herein described is applied specifically to gas-flow problems (in which flow varies as the 0.5 power of the pressure drop); the method is equally adaptable to studies pertaining to other fluids (such as water, in which the flow varies as the 0.54 power of the pressure drop). This requires only very minor

modification of the method.

In solving gas flow problems by means of electric circuits it is logical to let pressure drop (or head loss) be represented by voltage drop and to let gas flow be represented by current in the electric circuits. By making the above quantities analogous as indicated, a map of a gas flow system will correspond to a similar diagram of the electric system in which all junctions and flow elements are maintained identically.

In a gas distribution network, the algebraic sum of the pressure drops around a closed pipe loop must be equal to zero. This important relation is automatically taken care of in the electric flow system inasmuch as the algebraic sum of the voltage drops around a closed electric loop is equal to zero by the nature of electric circuit performance. In a gas flow situation the total flow into a junction of several pipes must be equal to the total flow away from that junction. Again this situation is automatically taken care of since one of the fundamental properties of electric circuits is that the sum of the currents flowing to a junction must be equal to the sum of the currents flowing away from that junction.

The difference between gas flow and electric current flow can best be demonstrated by reference to well known flow relationships. One of the formulas which has received wide acceptance for the calculation of low-pressure gas-system performance is the Spitzglass Low Pressure Formula. This may be written as

$$Q = 3550\,K\,\frac{\sqrt{h}}{SL} \qquad \text{(Eq. 1)}$$

where $K = \sqrt{\dfrac{d^5}{1 + \dfrac{3.6}{d} + .03d}}$

- d = actual inside diameter of the pipe
- h = pressure drop in inches of water column
- L = length of the pipe in feet
- S = specific gravity of gas referred to air
- Q = flow in standard cubic feet per hour

In any given system, the specific gravity of the gas is considered as being constant throughout so that for any particular pipe section the equation may be written as

$$Q = K_s\sqrt{h} \qquad \text{(Eq. 2)}$$

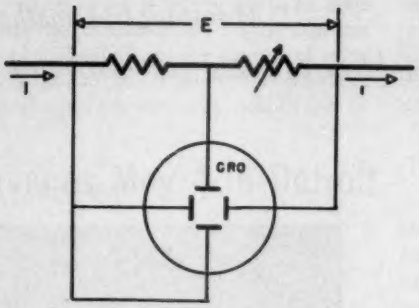


Fig. 1. Basic Connections

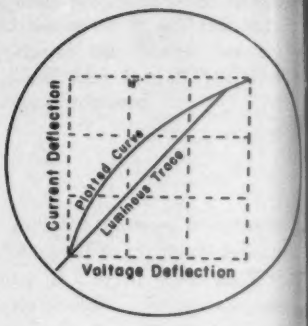


Fig. 2. View of the Indicator Screen

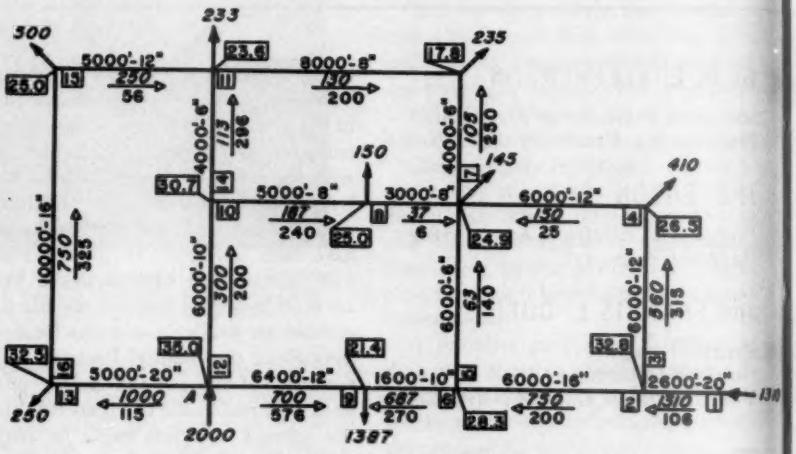


Figure 4. Solution by Calculation

The expression for gas-flow, as written above, is somewhat different from the corresponding expression which describes the flow of electric charge. This expression may be written as

$$I = GE \qquad \text{(Eq. 3)}$$

where I is the current flow in an electrical element
G is the conductance of the electrical element
E is the voltage difference across the element

(This equation could be written in the more familiar form

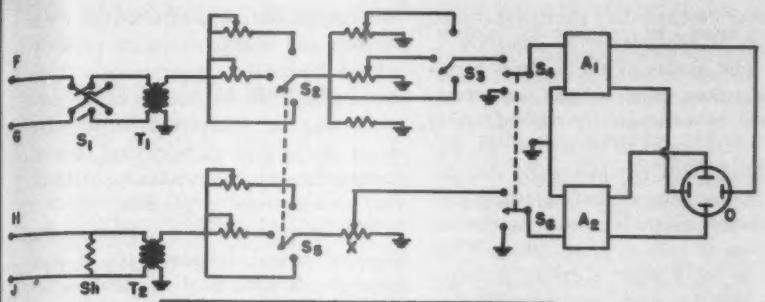
$$I = E/R$$

in accordance with Ohm's Law. Equation (3), however, is more nearly of the form of equation (2) and for that reason it is used in this paper.)

Because of the difference in the two equations for flow, it is necessary that the electrical element be modified to obtain the desired performance. This performance is described by equations of the type

$$I = K_e\sqrt{E} \qquad \text{(Eq. 4)}$$

It is a relatively simple matter to vary the resistance (and thus the conductance) of the electrical elements so that the current flow will be proportional to the square root of the voltage drop as required by Equation (4). The development of a simple and effective method for adusting resistor elements in their proper relationship to current flow and voltage drop makes it possible to represent, by an electric circuit network, the physical behavior of a gas flow system. The method of adjusting circuit elements is one in which the proper adjustment is shown by visual indication without the necessity for measuring any electrical quantities or for making inter-



Signal Reversing Switch — S_4 & S_5 Zero Position Checking Switches — X Pipe Potentiometer
Isolating Transformers — O Oscilloscope — F, G, H, J, Connections to Network Analyzer
Ganged Indicator Range Switches — S_3 Pipe Potentiometer Range Selector — Sh Current Shunt
A_1 & A_2 Oscilloscope Amplifiers

Figure 3. Switching Device Circuit Diagram

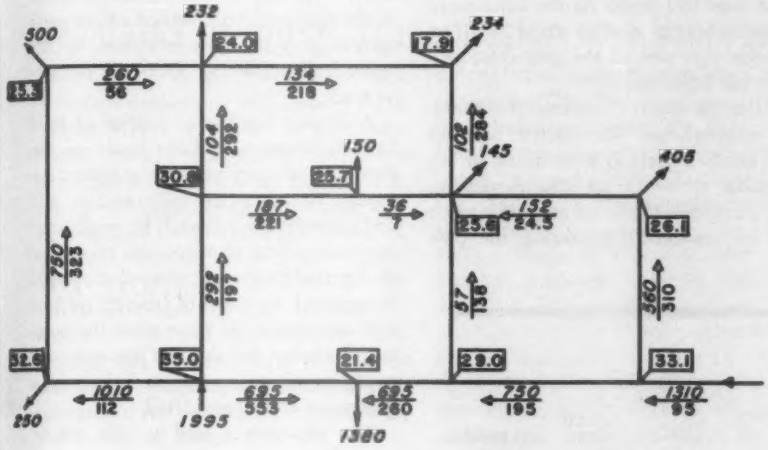


Figure 5. Network Analyzer Solution

mediate calculations. This method of adjustment is described in detail in Appendix I.

For the calculation of intermediate pressure gas system performance, the Spitzglass High Pressure Formula has received much use. This can be written as

$$Q = 4830\,K\sqrt{\frac{Pa}{SL}} \qquad \text{(Eq. 5)}$$

where $Pa = P_1^2 - P_2^2 = \frac{(P_1 + P_2)}{2}(P_1 - P_2)$

P = pressure drop in pounds per square inch

a = average pressure in pounds per square inch absolute

P_1 and P_2 = initial and final pressures in pounds per square inch absolute.

All other symbols have the same meanings as before.

In a similar fashion to the reduction that was performed on the low pressure formula, this high pressure formula may be reduced to the form

$$Q = K_g'\sqrt{Pa} \qquad \text{(Eq. 6)}$$

It can be readily seen by a comparison of Equations (2), (4) and (6) that the same sort of analogy holds for Equation 6 as for Equation 2; however, voltage is now analogous to Pa instead of h as it was formerly. Except for this slight modification, the same methods of analyses may be used for low and high pressure system analysis.

In making a pressure-flow study of a complicated pipe network, it is necessary for the investigator to have at hand a map of the pipeline network showing lengths and diameters of all pipe sections. It is necessary to know the inflow at each supply point or the pressure maintained at each supply point. In addition, information must be available regarding outflow from the system at each load point.

In addition it is necessary to have at hand information relative to proposed systems changes, such as new supply points, new loads, and proposed pipe system revisions. Service limitations such as allowable pressure ranges and extremes of anticipated flows should be prepared in advance, in order that the studies may be arranged in the most advantageous sequence.

The first step in the analysis of a gas system is the determination of a characteristic constant K_g or K_g' for each pipe section in the network (Equations 2 or 6). This can be done by using tables or by using a gas-flow slide-rule. Multiplication of each of these values by the appropriate constant converts them to appropriate values of K_e. (Equation 7, Appendix I.) These new factors applied to an electric network permit the study of the pipe network in terms of electric network response. Details of this conversion are given in Appendixes I and II.

Known pressures in the gas flow network must be converted to known voltages in the electric network by multiplication by an appropriate constant. The flow for each load point on the gas system must be converted to a current value by multiplication by another similar conversion factor.

With the above information, the problem is ready to be set up on the network analyzer. The determination of all constants and the conversion of gas flow to electric circuit quantities are described in the example given in Appendix II.

Each individual pipe section of the gas network is represented by an individual variable resistance (or conductance) element, the assembly of the resistance elements forming a network similar, as far as junctions and connecting ties are concerned, to the pipe network. A resistor (or conductance) element is connected to the electric network at each junction corresponding to a load point. Voltage sources are connected to the electric network at junctions corresponding to source points.

With electrical connections completed, those resistors representing pipe sections are given initial settings. While any arbitrary value may be chosen for these settings, some judgment based on previous experience may be helpful. They can be approximately set in accordance with

estimated flows and pressures. Next the voltage sources are adjusted to appropriate values and the circuit elements representing loads adjusted to give proper outflow at each load point so as to simulate specified conditions. In the manipulations that follow, source voltages and load currents must be maintained at or near the specified values. In most network analyzers no difficulty is experienced in maintaining desired voltages at source points. Current flow through the load elements may change as adjustments are made in the network necessitating resetting of the resistance of the load elements. Some network analyzers are equipped with special circuits which maintain constant currents through load elements. Such arrangement contributes materially to the speed of the manipulation.

With source voltages and load currents maintained approximately constant, the remaining operation is to adjust all circuit elements representing pipe sections so that the flow (current) through each pipe section will be related to the pressure (voltage drop) across that pipe section as represented by Equation 1. The adjustments of the resistors representing these pipe sections are accomplished by a cut-and-try method, using the visual indicator described in Appendix I. This requires going through the electric network and adjusting each individual resistor element. As the adjustment of each element influences the flow in every other element, it might seem that this would present a hopeless task. However, experience shows that this adjustment can be made to a degree of accuracy suitable for engineering purposes by adjusting each resistor element of the network in succession three times, or at most five times. As the adjustment of each element may be made in a few seconds, this part of the procedure presents but little difficulty.

After the required amount of cut-and-try manipulation, the electric network will finally be put in a condition of adjustment to which all source voltages and all load currents are of proper value and all resistors representing the pipe network sections are so adjusted that their currents and voltage drops are properly related. Under this circumstance, voltage drops read across any section of the network may be interpreted as pressure drops in the pipe network and current measured at any point within the network may be interpreted as gas flow.

This method has been applied to the study of several different types of pipe networks. In some of these problems results of long-hand calculations were available. A comparison of results by long-hand calculations with results obtained by network analyzer methods is shown in Figures 4 and 5. From these, it may be noted that the results obtained by the electric circuit method are in good agreement with those obtained by the more time-consuming slide-rule computations.

A limited number of studies of fluid flow problems have been made on the Purdue University network analyzer. Although the time for such studies will undoubtedly be reduced by additional experience, time requirements on several of the studies are of interest. As might be expected, the network analyzer method is of most economic value when the number of meshes involved in the system is large, or where several variations in a system are to be considered.

The experiences lead to the conclusions that:

1. Network analyzers of the type used by electrical engineers may readily be adapted to the solution of fluid flow problems involving complicated pipe networks.
2. The method of adaptation is simple and requires a minimum of auxiliary equipment.
3. The layout of the pipe system and the layout of analogous electric system are very similar, all junctions and connecting ties being maintained.
4. Pressure drop in the fluid flow system is represented by voltage drop in the electric system while flow in the fluid system is represented by current in the electric system. The manipulation of the network to set resistors to the proper current-voltage relationship is easily and quickly accomplished.
5. The accuracy of the network analyzer method is equivalent to that obtained by slide-rule calculations. The time requirements for network anlyzer solution of a gas flow problem are favorable to the method particularly in com-

TABLE I

PIPE NO.	LENGTH	DIAM.	K_x'	K_x	X	CALCULATED FLOW 1000 CF/Hr.	MEASURED FLOW 1000 CF/Hr.
1	2600	20	128,000	0.34	0.41	1310	1310
2	6000	16	54,000	0.142	0.98	750	750
3	6000	12	30,600	0.081	1.73	560	560
4	6000	12	30,600	0.081	1.73	150	152
5	6000	6	5,300	0.014	10	63	57
6	1600	10	40,500	0.107	1.31	687	695
7	4000	6	6,500	0.0172	8.13	105	102
8	3000	8	15,100	0.040	3.50	37	36
9	6400	12	29,000	0.078	1.80	700	695
10	5000	8	12,100	.032	4.38	187	187
11	8000	8	9,100	.024	5.83	130	134
12	6000	10	21,200	0.056	2.50	300	292
13	5000	20	121,000	0.24	0.58	1000	1010
14	4000	6	6,500	0.0172	8.13	113	104
15	5000	12	34,000	0.090	1.56	250	260
16	10,000	16	41,200	0.109	1.28	750	750

plicated pipe systems with many closed loops.

Appendix I—The method of adjustment

The visual indicator used in the Purdue University method of adjustment is a cathode ray oscilloscope. The deflection of the cathode ray beam may, by proper circuit arrangement, be made to deflect an amount indicative of the voltage appearing across a circuit element or indicative of the current flowing through a circuit element. If the spot is deflected vertically by an amount proportional to the current in a circuit element and horizontally by an amount proportional to the voltage drop across the circuit element (Figure 1), the resultant deflection provides a means of comparing the voltage and current values. A curve, drawn on the screen of the oscilloscope (Figure 2) according to the relationship desired (Equation 4), will indicate whether the voltage and current values have the correct relationship, since when the luminous spot coincides with the curve, the relationship must of necessity be correct. Adjustments of circuit resistance will bring about the desired coincidence.

If a D-C analyzer is used, the luminous image on the screen will be a small spot which is made to coincide with the curve by adjusting the resistance of the element.

If an A-C analyzer is used, as in the Purdue University work, the luminous trace is a straight line through the origin. Adjustment is accomplished by varying the resistance of the element and is correct when the end of the trace coincides with the curve (Figure 2).

In using the cathode ray oscilloscope as an indicator as described above, it is necessary to provide several ranges of indicator sensitivity. It is also necessary to adapt the indicator to values of K_e which vary between wide limits. A further requirement is that a single curve, drawn on the oscilloscope screen, must be sufficient for the adjustment of all elements in the network. These features are incorporated in the switching device whose circuit diagram is shown in Figure 3.

In general, the pipe sections of a network will differ from each other in both length

(Continued on page 44)

Set dates of initial Transmission and Storage Conference

The first A. G. A. Transmission and Storage Conference will be held April 30 and May 1, 1953, at the Edgewater Beach Hotel, Chicago. The conference is designed to replace the Natural Gas spring meetings which have been discontinued as a result of the adoption of the revisions to the Association's Constitution and By-Laws. Also, unlike the spring meetings, which were aimed primarily at top level executives, the conference will be devoted to subjects of concern to operating and technical men engaged in the production, transmission, and storage of natural gas.

A Program Committee, now engaged in selecting the subjects and speakers for the two-day conference, hopes to have the advance program available for distribution within the next month. The committee consists of Walter H. Davidson, superintendent of operations, Transcontinental Gas Pipe Line Corp., Houston, chairman; Fenton H. Finn, New York State Natural Gas Corp., Pittsburgh; Julian L. Foster, Lone Star Gas Co., Dallas; F. A. Hough, Southern Counties Gas Co., Los Angeles; Joe T. Innis, Northern Natural Gas Co., Omaha; Frederick J. Pfluke, Rochester (N. Y.) Gas and Electric Corp.; and Dr. Channing W. Wilson, Consolidated Gas Electric Light and Power Co. of Baltimore, Baltimore, Maryland. J. Stanford Setchell, secretary, A. G. A. Operating Section, under whose auspices the conference will be presented, is secretary of the committee.

Tentative plans for the conference call for general sessions on both mornings, with parallel luncheon sessions, extending into the afternoons. Agenda will include such subjects as compressor station operations; pipeline construction, maintenance, and cleaning; rights-of-way; legal statutes and lease forms for underground storage operations; communications systems; and problems of dispatching. The luncheon sessions will be informal, off-the-record discussions designed to provide a free exchange of information between personnel engaged in similar activities.

In an effort to develop a program which will be of the greatest interest and benefit to the largest number of people, the Program Committee will welcome suggestions on items for possible consideration at the conference. Such suggestions should be sent as soon as possible to Mr. Setchell at A. G. A. Headquarters. Requests for hotel accommodations should be sent direct to the hotel.

To hold Research and Utilization Conference in Cleveland

An American Gas Association Research and Utilization Conference will be held, April 7 and 8, 1953, at the Hotel Statler, Cleveland, under the sponsorship of the Committee on Domestic Gas Research and the Utilization Bureau of the Association. H. A. Eddins, vice-president, Laclede Gas Co., St. Louis, will serve as conference chairman.

The program will include panel discussions, a clinic and a series of papers by informed speakers on subjects in the fields of domestic gas research and utilization. Key speakers will be presented at luncheon meetings.

The conference is planned to aid the technical and sales staffs of gas utilities and gas appliance manufacturers. It will be of interest to all who are engaged in the utilization, service and operating phases of the gas industry. Some of the subjects to be covered are: galvanized water heater tank corrosion, principles of venting, gas versus electric water heaters, burner research and other domestic utilization topics.

Tar Dehydration Subcommittee asks industry cooperation

The problems and the latest technical developments in tar dehydration are being gathered and studied by the Tar Dehydration Subcommittee, A. G. A. Operating Section. Various gas utilities have been personally contacted by committee members, as part of this program.

In addition, the committee is urging that persons who have not been contacted shall write them stating their problems and/or solutions. Communications should be addressed to A. H. Wicht, chairman, Tar Dehydration Subcommittee, c/o Long Island Lighting Co., 250 Old Country Road, Mineola, New York.

The circus motif—as attention-catching as a band, as appealing as youth, as time-tested as peanuts—swings into place to sell gas ranges

Carnival of Gas Cooking hits the sawdust trail

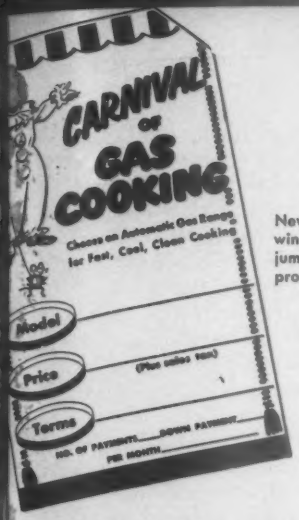
The Carnival of Gas Cooking is coming to town with the greatest three-ring show in the entire cooking field.

This new campaign for April, May and June, 1953, supplants the Spring Style Show which has been the cooking campaign during this season of the past two years. The Carnival of Gas Cooking provides every opportunity for glamorizing and dramatizing the three great acts of cooking—broiling, baking and boiling. It also offers splendid opportunities for colorful special events and for store decoration.

National advertising scheduled for the period of the campaign will feature the 1953 national advertising theme—"Only Gas Gives You—" followed by the many exclusive cooking features found only in gas ranges and in gas, the fuel.

Insertions in the April magazines will bear down heavily on broiling features with such headlines as "Nothing Broils Food Like The New Automatic Gas Ranges" and will hit heavily on smokeless broiling and "Flame-Kissed Flavor."

May ads will be devoted to baking. One headline reads "Honestly! The Oven *Alone* Is Worth The Price of the



Newspaper ad mats, carnival posters, window streamers, pennants, balloons and jumbo price tags are among the "Carnival" promotion material available from A. G. A.

New Automatic Gas Ranges!" and "Only Gas Gives You More Oven For Your Money."

Insertions for the June magazines, which will include a double page spread in full color in the *Saturday Evening Post*, are devoted to top-of-the-stove cooking. The double spread carries the headline "See the Tremendous Choice of Top-Burner Arrangements You Get Only With Gas"; a sub-head is "Only Gas Gives You On-Off Heat—Any Heat —Instantly." This double spread will carry illustrations of virtually every different gas range top currently on the market.

In addition to the *Saturday Evening Post*, other books in the schedule include *McCall's, Better Homes and Gardens, Good Housekeeping, Ladies' Home Journal, Woman's Home Companion, American Home, Parents'*, and *Today's Woman*.

The promotion portfolio, which covers all phases of the Carnival of Gas Cooking campaign, provides newspaper mats of adaptations of each of the national advertisements for local newspaper use. These are provided in three and four column sizes. The main feature of the campaign portfolio is a dealer broadside which shows the national advertising support for the campaign and also details a 25-piece display kit for window and sales floor use.

The display kit includes a full-color carnival poster 30 inches × 60 inches which is ideal for use on a wall, over a gas range display, or for the back wall of a window display. Two window streamers five feet long, eight double pennants, and six jumbo price tags are included. An unusual feature, which gives the display a third dimension and motion, is a clever reproduction of a circus tent; this is used in conjunction with an 18 inch-high balloon made in the shape and appearance of a clown and carries the copy "Only Gas—" the tent carries the balance of the copy, in five different versions on five of the most important features that belong to gas exclusively. The clown balloon bobs and weaves with the motion of air. The same material is duplicated in another set of five pieces which reproduce both the tent and the clown in easel cardboard and are usable for spots where the larger piece would not readily fit. The entire display kit is being sold by the American Gas Association Promotion Bureau for $5.25, parcel post prepaid, for orders received before February 24th. For orders after that date the price will be $7.00.

In addition to the advertising and display included in the campaign, there is being offered a number of special event ideas, premiums, giveaways, direct mail literature, and sales training material. One of the features of the campaign for sales training will be a booklet of "quickie demonstrations," most of which are planned around the use of a "live" gas range. These actual demonstrations are also being featured in a series of trade paper advertisements prepared for appliance retailing publications under the sponsorship of the Gas Appliance Manufacturers Association gas range division.

The campaign is expected to attract even a greater participation on the part of gas utilities and dealers alike than did the highly successful Spring Style Show of the past two years. The chief reasoning behind this belief is that the carnival is a campaign which can be put on more effectively and with less trouble and at less cost than the Style Show.

Gas Industry Clinic stresses important sales points

The beauty, safety and efficiency of gas appliances and equipment are most important factors for builders to consider when looking for easy and satisfactory sales of gas homes. This basic truth was brought home to three different groups at the recent gas industry clinic sponsored by the Residential Gas Section and the New Freedom Gas Kitchen Bureau of the American Gas Association, during the annual convention of the National Association of Home Builders in Chicago.

Howard D. Valentine, The Peoples Gas Light and Coke Co., Chicago, presided at each of the three sessions of the clinic, in place of F. X. Mettenet, who was ill.

Sell a woman a beautiful kitchen and you have sold her a house, Harry Swenson, director of display and kitchen planning of The Peoples Company, declared. Selling new ideas and gadgets for the home does not mean that all old ideas should be discarded. The old idea of making the kitchen the center of family life still holds true.

While builders consider most rooms of the house in terms of feet of available space, in the kitchen it becomes a matter of inches. Careful planning is necessary because of the need for space and for efficiency of kitchen operations. Since most appliances are fixed and stationary, the kitchen must be planned with great precision.

Before an attractive kitchen and laundry background staged by Mutschler Brothers Co., he demonstrated that beauty in design and color as well as step-saving efficiency can be achieved through correct planning of modern gas kitchens. U-shaped and L-shaped kitchens still are popular. Additional wall space for cabinets and for work areas can be gained through placing appliances, dining counters or work tables as islands or peninsulas. Women have learned to place things at the point of first use. This calls for more storage space and efficiently planned work areas.

Not all women want the appliances and work table to be 36 inches high, Mr. Swenson pointed out. Builders today are called upon to tailor these dimensions to the convenience of the customer. Light and ventilation are important in the kitchen. Direct lighting over work areas and fluorescent lighting elsewhere in the kitchen is an accepted practice in many places.

Utility rooms for automatic gas laundries are featured in many new houses. Automatic washers, dryers and water heaters are made in such attractive colors today that many women prefer a utility room on the second floor where most of the soiled clothes are gathered and where clean laundry most often is stored.

He pointed out some of the most frequent errors in kitchen and laundry planning. These included too little storage space, cramped areas around appliances, lack of thought given to kitchen traffic when installing kitchen equipment, limited working space, and poor lighting.

Methods of properly installing gas appliances and equipment so as to obtain the maximum in safe, efficient service, were discussed by C. George Segeler, utilization engineer, American Gas Association. Mr. Segeler advocated the selection of gas water heaters on the basis of recovery capacity rather than by storage tank capacity.

The inclusion of automatic laundry equipment and automatic dishwashers has greatly increased the demands made on the capacity of storage water heaters. Continuous availability of hot water has become increasingly important today.

Selection of the proper storage tank material also is important. He recommended that builders and contractors study the local history of galvanized tanks. Where the life of such tanks, even when equipped with magnesium rods or other corrosion anodes, was short because of excessively corrosive water, the selection of glass or monel metal tanks may be indicated.

Gas water heaters should be located as near vents as possible so that flue connections will not be too long or improperly pitched. With laundry dryers proper venting is needed to take care of water vapor released in drying clothes. Clothes dryers require a clearance of six inches from adjacent combustible walls and at least sixteen inches at the top of the dryer.

Adequate air supply is needed for proper operation of gas heating and gas air conditioning equipment. Gas furnaces to be effective must be properly located. A gas duct furnace should not be located on the suction side of a blower. In all-year air-conditioning equipment, where heat is supplied in the winter and a cooling system operates in the summer, the gas heater should not be located downstream from a cooling coil. Cold air passing through the heater in the summertime would allow the heater to act as a condenser of moisture from the room air, causing rusting and shortening the life of the heater.

Three points basic to all gas installations are proper mounting and clearance of appliances, air supply for ventilation and combustion, and removal of the products of combustion, Mr. Segeler told the builders. He showed several slides illustrating poor practices in installing and venting gas equipment.

In a question and answer period conducted by John L. Hall, Southern California Gas Co., Los Angeles, many specific problems of builders and salesmen were presented and solutions found for most of the problems.

Gas appliances star in House of Ideas

THE 1953 HOUSE OF IDEAS, created by *House and Garden* magazine, shows that built-in gas kitchens are tops in modernity, versatility and efficiency. Designed by architect George W. W. Brewster, the House of Ideas incorporates all the latest innovations in home design. The units selected for use in the kitchen are the Chambers stainless steel On-a-Top burner and the In-a-Wall oven, which make convenient waist-high cooking possible.

The magazine reports that "Today's kitchen is no longer the forgotten room of the house, unseen except by cooks. In these informal and servantless times, it is the housewives' living room, the hub of the house for the entire family."

The House of Ideas model, built in Winnetka, Ill., attracted 30,000 visitors during its one-month public showing.

Industry news

Co-op range drive proves successful

THE PACIFIC GAS AND ELECTRIC Co., the Gas Appliance Society of California, San Francisco newspapers, radio and television stations can pat each other on the back for cooperating to bring to the city one of the most successful gas range promotions in history. The promotion, a local gas cooking school, was sponsored by the San Francisco unit of the Gas Appliance Society.

During the first stages of planning, were many pessimistic notes—some claimed that women wouldn't travel to town so early in the morning for a cooking school, others said a gas range promotion of this type would not work in San Francisco.

However, on October 29, the day set aside for the promotion, over 3,500 women crammed into San Francisco's Fox Theater —the largest movie house west of Chicago. Fine talent had been assembled to present a well-integrated program, and the show was met with genuine enthusiasm. Lee Giroux, local TV star, acted as master of ceremonies. Other leading players were Mrs. Cleo Filsinger, PG&E home economist; Martha Logan, Swift & Co. representative; and Elena Zelayeta, sightless cooking expert of radio and television. Publicity for the event was exceptionally good. All daily papers, radio and TV stations shouted the news so that every homemaker in San Francisco knew all the details. For a two-week period preceding the class, a fine display of gas ranges was set up in the theater's orchestra pit. Between every movie showing, the pit rose to view, featuring an ensemble of the most modern gas ranges ablaze with blue-white flood lights.

The show was professionally staged, with the complete aid of the theater staff, electricians and technicians. The home economists handled the cooking part of the program, keeping up a fast, interesting pace. Martha Logan prepared a full-course dinner, including roast turkey and baked Alaska. One of the highlights was Elena Zeyaleta's brandy caramel custard "Flan," a spectacular Mexican dessert. When the brandy was lit, the theater lights were turned down, leaving only the blue brandy flame visible.

The program's clincher was the preparation of a Thanksgiving dinner under "black light." Range, utensils, plastic turkey, vegetables, shoes, apron, hat, gloves—all were painted with fluorescent paint, and they alone were visible to the audience. Mrs. Filsinger, as the "Spirit of Miss Flame," narrated.

As an extra bonus, two lucky women won deluxe, fully automatic gas ranges. Fifty others won shopping bags filled with high quality foods and laundry items. Also, the first 500 women to enter the theater received a free copy of "Better Meals at Lower Cost," which retails at $1.00.

As a result of this well-planned carefully coordinated promotion, 3,500 women saw proof that modern automatic gas cooking is the best that money can buy. But this number would have to be multiplied time and again to count all the favorable impressions made by the orchestra pit range display, radio, TV, newspaper and word of mouth advertising.

The response to the school has been so overwhelming that serious consideration is being given to make it an annual event.

New England sponsors first public relations conference

TACKLING PUBLIC relations problems related to the extension of natural gas to New England, as well as those pertaining to routine daily contacts, the first Public Relations Conference of the New England Gas Association was an outstanding success. More than 80 persons took part in this pioneering event which was held January 6 in Boston, Massachusetts.

Sherman R. Knapp, president of NEGA and president, Connecticut Light and Power Co., presided and introduced the four featured speakers. Opening speaker was Robert M. Brigham, executive assistant, Springfield Gas Light Co., who described the effective use of bill stuffers, employee magazines, foremen's bulletins, and a variety of community relations efforts. He noted that the gas bill amounted to only one and one-half percent of the family budget but sometimes caused 90 percent of the public rancor.

A definite public relations policy ranging from the president to the meter reader is a prerequisite of any sound utility program, Alfred M. Wade, The Connecticut Light and Power Co., told the conference. He emphasized the part the field employees play in building public goodwill. Annual surveys sampling changes in public attitudes toward the company were also analyzed by Mr. Wade.

Horton Chandler, NEGEA Service Corp., Cambridge, exhibited and described a series of direct mail pieces designed to promote better stockholder and customer relations.

New public relations problems resulting from the extension of natural gas service to New England were stressed by E. G. Twohey, president, New England Electric System's gas companies, and past NEGA president. He cited rate complaints, customer service problems, pipeline right-of-way difficulties, and legislative developments which have made good public relations programs a prime necessity if the industry is to continue to prosper.

Mr. Twohey described employee and customer contact training courses of the NEES companies, and emphasized the importance of executive talks to employees on vital current topics. With surveys showing eight to 10 percent of the customers dissatisfied after natural gas conversion, Mr. Twohey concluded that "public relations must be improved or the gas sales curve will drop."

Emphasize insurance value to gas industry

One exhibit of an industrial series prepared by Northwestern Mutual Life Insurance Co., Milwaukee, features the natural gas industry. The exhibit presents basic facts of the industry to the company's 1,500 home office employees, visitors, and out-of-town agents. Part of the company's tour itinerary, it emphasizes part played by invested insurance funds in industrial financing

Servel musical opens tour to show '53 appliances

Colorful settings, catchy music and glamorous girls provide a fitting background for Servel's new models, during the two-troupe tour that will play engagements in major cities from coast to coast

A MILLION-DOLLAR MUSICAL extravaganza, the 1953 "Show of Stars" went on the road during January to show Servel's new line of appliances to dealers from coast to coast. W. Paul Jones, president of Servel, Inc., has announced that two road companies are now taking the "Show of Stars" to 30 cities throughout the country.

"We have the most advanced and complete line of refrigeration products in the industry's history," said Mr. Jones, "and we intend to show off these products to their best advantage to the men who will sell them. To that end we have retained the best professional talent available to produce a show for dealers that will rival anything available to the general public."

Mr. Jones emphasized that the million-dollar production is in addition to the record-breaking $6 million advertising budget with which Servel is backing its new products in newspapers, magazines, radio and television.

The line that will receive this national showcasing stars the revolutionary "Ice-Maker" refrigerator which eliminates the ice tray. It also includes new furniture-styled window-type room air conditioners, horizontal and upright home food freezers, and electric compression refrigerators to join the company's gas and electric absorption refrigerators.

The five-hour show has been assembled by Max Richard, a leading Broadway producer. It will be a full-scale musical production, traveling in private railway cars and playing the largest theaters of the cities it will visit. However, tickets to all performances will be confined to company distributors, dealers and utility representatives.

Each of the all-professional all-Broadway casts will include 10 dancers, six showgirls, 12 dramatic people, two pages, five singers, a comedian, narrator, musical conductor, four key musicians, four stagehands, a soundman, wardrobe mistress, projectionist, company manager, unit manager and assistant director. Together the two troupes will total more than 100 persons, including company executives who will appear in the productions.

Each company will carry 200 costume changes, 50 lights, eight curtains, 25 set pieces of standing scenery and all its props.

The "1953 Show of Stars" has been planned along the same lines by the agency, Hicks and Greist, as the show which Servel used to introduce its 1953 appliance line to its distributors in Chicago. It follows the company's policy, voiced recently by Mr. Jones, that Servel would confine its civilian manufacturing activities to the field it knows best—refrigeration and air conditioning.

The complete schedule for Servel's "1953 Show of Stars" follows:

Southern show; New York, January 21; Pittsburgh, January 23; Philadelphia, January 26; Washington, January 28; Charlotte, January 30; Miami, February 2; Birmingham, February 6; New Orleans, February 9; Houston, February 13; Oklahoma City, February 16; Memphis, February 18; St. Louis, February 20; Evansville, February 22, and Indianapolis, February 24.

Western Show; Boston, January 21; Cleveland, January 23; Buffalo, January 26; Chicago, January 28; Detroit, January 30; Cincinnati, February 2; Kansas City, February 4; Denver, February 6; Los Angeles, February 9; San Francisco, February 11; Seattle, February 15; Minneapolis, February 18, and Omaha, February 20.

Seattle utility promotes gas as dependable power source

THE PACIFIC NORTHWEST'S acute electrical power shortage has been utilized by the Seattle Gas Co. to remind Washington State citizens that gas is another great source of dependable power. To tell its story, the company recently ran a 6-column advertisement in the *Seattle Times* and the *Seattle Post Intelligencer*.

Headlined "Gas is Power," the ad called attention to "facts you should know at a time when the Northwest's industrial future is at stake," and pointed out how and where "gas can help in this disastrous power shortage."

With the driest year in Pacific Northwest history, home consumers have been continuously alerted by press, radio and television to conserve on electricity. Industry has faced a constant threat of drastic power reductions and resulting unemployment.

Copy for the Seattle Gas Co. ad explained the two basic kinds of power, mechanical and thermal. It then told, in consumer language, the superiority of gas for the latter use—"this means water heating, cooking, refrigeration, air conditioning, house heating and industrial heating processes."

The public relations aspect of the message was emphasized by the statement, "At this crucial time, there can be no question of competition. Both sources of power must be utilized efficiently, *where they can do the best job.*"

A reference to natural gas in the ad was in the footnote: "The Seattle Gas Company's potential capacity will keep pace with all industrial and residential demands . . . with the coming of natural gas to the Northwest our resources will be unlimited."

Gloucester boasts most northerly natural gas

A NATURAL gas pipeline and river crossing recently constructed for the Gloucester (Mass.) Gas Light Co. by United Engineers & Constructors Inc. of Philadelphia, represents the most northeasterly penetration of natural gas in the United States. This terminal of the great cross-country natural gas pipelines, originating thousands of miles away in the Southwest was placed into operation last September.

The eight-inch pipeline at Gloucester extends from a Northeastern Gas Transmission Co. metering station approximately three and one half miles along the coastal highway. Just as it enters this fishing port, it crosses under the Annisquam River. A new gas handling plant by United Engineers is a part of this construction.

The crossing beneath the 1500-foot wide Annisquam was constructed by dredging a trench in the river bottom, prefabricating sections of the pipeline ashore and then successively welding the sections together as the line was dragged into the trench and pulled across river from the opposite shore. Because of marshy approaches and quicksand bottom at the crossing, fill was used for construction of the pipeline right of way on shore.

Peoples Natural plans record growth in 1953

EXPANSION OF THE PEOPLES Natural Gas Co. and the New York State Natural Gas Corp. is progressing by leaps and bounds. During 1952-53, the two companies will spend $45,794,200 to bring better natural gas service to their 220,000 retail consumers and numerous wholesale customers.

Major projects contemplated in the 1953 progress drive include the replacement and construction of almost 23 miles of pipeline at the cost of over $1,024,000 by Peoples Natural. To serve wholesale customers better, New York State Natural anticipates adding 63.8 miles of line during the year.

Both companies are developing vast reservoirs of gas in underground storage pools. For instance, on last October 31, the companies had 68,884,101,000 cubic feet of gas in storage. By the same date in 1953, New York State Natural alone will have 65,402,000,000 cubic feet in storage.

In a never-ceasing effort to find new local sources of supply, Peoples will drill 13 shallow and six deep wells, while New York State Natural expects to drill 17 wells. These projects do not include new reservoirs to be developed for underground storage.

Sales figures show that the demand for natural gas during 1953 will exceed that of 1952. For instance, Peoples estimates its peak daily demand for the 1952-53 heating season at 494,000,000 cubic feet, while New York State estimates a peak daily demand of 861,000,000 for the same period.

Shareholder Relations Manual available

THE FIRST INDEXED HANDBOOK on the subject of shareholder relations has been published by *Financial World*. Called the "Shareholder Relations Manual," this illustrated reference is edited by Weston Smith, director of *Financial World* annual report survey and an authority on shareholder relations techniques and financial community liaison.

The 68-page reference is composed of a foreword and 12 chapters, ranging from the history and objectives of this division of public relations, through the preparation and distribution of corporation annual reports, and closing with an analysis of shareholder relations techniques. Each chapter is illustrated with charts or reproductions of sample material. A feature of the book is the reproduction in full size of the 27 annual report advertisements judged best in nine industrial classifications in last year's survey.

The "Shareholder Relations Manual" is available at one dollar per copy at the offices of the Guenther Publishing Corp., 86 Trinity Pl., New York.

New Rasch firm buys Kemper; to make gas appliances

A NEW COMPANY, the Rasch Manufacturing Co., has acquired certain assets of the Security Manufacturing Div., The Kemper Investment Co., and will engage in the production and sale of gas-fired appliances.

The company has acquired the trademark, "Security," and will merchandise and manufacture water heaters, conversion burners, furnaces, floor furnaces and other appliances under this name.

The plant is in Kansas City, Mo., at the same location as the Security Manufacturing Division.

At the first directors meeting, the following directors were elected: William T. Rasch, president; Lee W. Rasch, vice-president and treasurer; Fred Bellemere, Sr., secretary and general counsel; and James R. Scherrer, Jr., chief engineer and sales representative.

In addition, Berl Berry, Morris S. Fogel, Harry D. Rice and Lewis A. Mears were elected directors.

Start biggest expansion

RECORD-BREAKING expansion, expenditures, improvements. Those are the 1953 goals of Consumers Power Co., Jackson, Mich., as it embarks on the largest construction program in its history. A total of $12.5 million will be spent to improve natural gas facilities, while $44 million will be invested in electric expansion.

To assist in financing the construction program, the utility is raising $21,618,415 through issuance and sale of additional shares of common stock.

Consumers Power Co., now serving 350,000 gas customers, and 700,000 electric customers, expects to add 37,000 new gas and electric customers in 1953.

Old Proceedings available

MARY E. AGEE, American Gas Association librarian, announces that the following are now available: American Gas Institute Proceedings, 1909, 1911, 1912, 1914, 1915, 1916; American Gas Association Proceedings, 1923-1935.

The volumes are available for the cost of postage. For further information, contact Miss Agee at A. G. A. Headquarters, 420 Lexington Ave., New York.

Designers honor Philadelphia manufacturer

Julius Klein, president of Caloric Stove Corp. (left) accepts the annual citation of the Philadelphia Chapter, Industrial Designers Institute from Paul Falk (center) chapter chairman. Ernest Bevilacqua (left) designer for the gas range and gas clothes dryer manufacturer, watches presentation ceremonies. Citation was granted to Caloric for "showing outstanding progress in the use of industrial design"

Manufacturers introduce '53 lines

THE GAS INDUSTRY is on the march! The 1953 lines of prominent manufacturers show scores of original designs, fresh ideas, sensible innovations to make home life better than ever for the average—not only the gilt-edged—American family.

Chambers

Chambers' major 1953 offering is the industry's first built-in modular cooking unit to offer direct flame broiling in combination with the top burners. The griddle and burner are controlled by handles which make it unnecessary to touch the hot broiler rack. The model also has four full-sized burners which are equipped with automatic lighting, pull-out crumb trays, drip rings and safety handles.

Chambers new modular unit

The pilot lights are designed to "double" as extra simmer burners and the broiler platter can be used as an attractive serving platter for table use.

Other modular units in Chambers' 1953 line are the In-A-Wall oven, large enough for a 40-pound roast, which can be built into cabinets in any convenient area of the kitchen; and the three- and four-burner In-A-Top units offered two years ago.

Servel, Inc.

Leading the parade to bring luxury to the country's middle class is Servel, Inc., with an all-year air conditioning unit for homes in the price range of $10,000 to $14,000. The company will market the new, two-ton gas fired unit, capable of providing summer and winter air conditioning for an average six-room home. ("Tons" means equivalent cooling capacity in terms of ice per 24-hour period.)

John A. Gilbreath, Servel's assistant vice-president in charge of air conditioning, has announced that design and engineering problems have been overcome to make all-year air conditioning available to anyone in the market to buy a home above the $10,000 level.

Two other major additions to Servel's air conditioning line are the Wonderair, a window-type room air conditioner and a 10-ton water chiller for small industrial installations.

Another exciting Servel design is the 1953 "Ice Maker" refrigerator which freezes ice cubes without trays. Tested for three years, the new refrigerator will be available in nine, 10 and 11 cubic foot models. It molds ice circles in half moon shapes, dries them and stores them in a basket where they remain loose and accessible. The complete elimination of manual filling and emptying of trays marks the first time that the refrigerator is 100 percent automatic.

As the ice circles are used, the unit automatically replaces them, stopping only when the basket is full. The basket holds more ice than four ice trays, but takes up no more room. Other features include egg trays and butter conditioner. A unique door latch which can be opened by elbow pressure, a quick-cold shelf, automatic defrost, vegetable fresheners, tall bottle space, adjustable shelves and cold control are other features. The '53 refrigerator will be backed by Servel's 10 year warranty, as in the past.

Other innovations in the Servel line include high-style window-type room air conditioners, three chest-type and two upright home freezers.

Servel's revolutionary Ice-Maker

Servel's unit cools low-cost homes

Caloric Stove Corp.

Outstanding feature of the Caloric 1953 line is its new automatic gas clothes dryer. Introduced to the market this year, the dryer stars a "lo-heat, hi-breeze" principle. By using scientifically controlled heat and more air, the Caloric dryer is described as safe and effective for all fabrics, from filmiest nylons to sturdiest denims.

Caloric dryer based on new principle

Decorator colors are glamorizing the new Caloric ranges. Offering what it calls the first practical use of color in gas ranges, Caloric has designed easily installed, removable door handles in 12 hues to blend with all kitchen color schemes.

From the dealer's point of view, Caloric's 1953 range gives the sales advantage of color without the inventory problem of stocking ranges in colored porcelain enamel. From the consumer's point of view it means a wide selection of color without additional cost, and the privilege of changing color any time during the life of the range.

Caloric offers decorator colors

Eureka Williams Corp.

Eureka Williams Corp.'s new residential cooling unit, named the Air-O-Matic, is a companion to the company's Gas-O Matic heating unit. Important feature of this air conditioner, which comes in two and three ton sizes, is the fact that installation and operation are easy, economical. No seasonal change-over servicing is required for this compact machine which occupies only 5½ square feet of floor space.

Geo. D. Roper Corp.

The Geo. D. Roper Corp.'s Dry-Aire automatic gas clothes dryer made its debut at the 1953 Chicago Furniture Market. The dryer, which will be introduced on a nationwide basis early this year, features a strong, large exhaust and lint trap, single dial control and automatic ignition.

Roper is supporting its new dryer with an intensive sales-stimulating promotional program, including 24-sheet billboard posters, broadsides and wall hangers, demonstration post cards, window and floor displays, and consumer folders.

Roper is also introducing several new ranges this year. The 30-inch "Space Master" features comfort-level broiling, automatic clock, timer, and convenience outlet. It has been designed especially to bring the very finest in gas cooking to those families with limited kitchen space.

In addition, Roper is innovating several modular units which permit strategic placement of cooking zones.

Roper-designed for efficiency, sturdiness, space-saving

Oregon gas crews check near-disaster, win praise

PORTLAND GAS AND COKE Co.'s Salem manager, Joseph Dodd and his gas crews deserve a hearty round of applause from the entire industry.

This is why: Late in November, a near disaster occurred—the gas line feeding a large area of the utility's territory was severed. Gas line failure is rare, and normal service is taken for granted in the Willamette Valley, Ore., as it is all over the nation. Therefore, the job of alerting the populace was extremely difficult.

But executives and workmen turned their bad luck into an opportunity to show how conscientiously a public utility serves its patrons.

Immediately after the gas line over the Tualatin River snapped, gas company maintenance men were on the job. They worked tirelessly to see that tragedy would not be added to discomfort. Every one of the region's 10,000 meters was turned off by hand so that restoration of the gas supply would not find open, unlighted jets. Sub-freezing temperatures, darkness and unfamiliar territory added to the handicaps.

Without rest for over 24 hours, the same men covered the territory again the next day, after the break was repaired, turning on the meters, bleeding the lines of air and listening to customers' complaints.

The next day, the *Oregon Statesman* in an editorial praising utility efforts said, "The efforts of the Portland Gas and Coke Co. [staff] deserves the commendation of every Mid-Valley resident whether personally affected by the outage or not. [The men] did a fine job in the face of an unforseeable and, for them, an unavoidable situation."

Safety program pays dividends to Massachusetts utility

"IS THE NEXT STEP safe?" The next step can be safe, says the Fitchburg (Mass.) Gas and Electric Light Co., if employees and management don't trust to luck, but rather, cooperate to make a safety program work.

The Fitchburg safety program does work—to the extent that the Massachusetts utility recently celebrated 700 accident-free days! To achieve this remarkable record, the employees and management worked on three premises: 1) that mechanical improvements have passed human ability to operate them; 2) that the safest facilities in the world cannot produce a safety record; and 3) that safety must be sold and publicized constantly.

The utility's record is a reflection of this careful thought, and also of a comprehensive 17-point program. The points are: 1. Approval of management; 2. Authority of one safety director; 3. Action by supervisors; 4. Accident investigation; 5. Instruction in first aid; 6. Awards; 7. Leadership; 8. Safety rules; 9. Safety committee; 10. Technical knowledge; 11. Recognition of employees; 12. Good housekeeping; 13. Contests; 14. Symbol; 15. Posters and messages; 16. Equipment and supplies; 17. Publicity.

Each point in the program has a specific objective. For example, the principal work of the safety committee is to determine hazards in work methods, and in construction. The work must be continuous and definite, with the goal of making work areas as free from hazards as possible.

One of the most outstanding features of Fitchburg Gas and Electric's program is a large bulletin board at the approach to the plant. The board, which promotes a new safety record every day, shows the number of days which have been worked without a disabling injury. In mid-winter that record was 700 days. But the best news is that the utility is still going strong, and is aiming for a better record every single day.

Bulletin board advertises safety

A. G. A. Public Information Committee appoints

EARLE A. CLARK, director of public relations, Northern Natural Gas Co., Omaha, Neb., and Schuyler F. Baldwin, director of public relations, Rochester Gas & Electric Corp., Rochester, N. Y., have been appointed members of the A.G.A. Public Information Committee. Howard A. Praeger, manager of publicity and advertising department, The Brooklyn Union Gas Co., has rejoined the A.G.A. committee after serving a tour of duty in the U. S. Army as a major of psychological warfare.

The Public Information Committee is headed by Willis M. Kimball, director of information, The Columbia Gas System, Inc.

Earle A. Clark

Schuyler F. Baldwin

Howard A. Praeger

Willis M. Kimball

Personal and otherwise

Stanley succeeds Shaw in San Francisco

SIDNEY B. SHAW, automotive engineer in charge of Pacific Gas and Electric Co.'s fleet of motor vehicles, retired on January 1. C. R. Stanley has been appointed to succeed him.

Mr. Shaw began his career with the company in 1912 after being graduated from Standford University as an electrical engineer. He was assigned to various rate and valuation duties until 1923, when a study he made of the company's automotive facilities led to the establishment of an automotive department of which he was appointed head. During Mr. Shaw's tenure, the department has grown from 800 motor vehicles to more than 5,000.

Mr. Shaw is the inventor of several internal combustion devices. He is a member of American Gas Association.

Mr. Stanley, formerly Mr. Shaw's assistant, is also an inventor. He was graduated in 1923 from Stanford University as a mechanical engineer, and was immediately employed by the California utility. He is a member of the Society of Automotive Engineers and American Gas Association.

Rochester names advertising and employment leaders

THE ROCHESTER (N. Y.) Gas and Electric Co. has announced several important staff promotions. John McConnell has been advanced to the position of employment manager and James J. Brady has been appointed advertising manager. Mr. Brady succeeds Arthur P. Kelly, former director of public relations and advertising, who retired recently after almost 18 years of service with the utility.

It was announced also that Arthur C. Rissberger, former assistant manager of employee relations has been named manager of the department, to succeed Willis E. Hughes who died recently. Dewitt Pike has been advanced to the position of superintendent of employee relations; Alfred H. Doud is now assistant director of public relations; Walter McKie moves up to general sales manager; G. Graydon Curtis has been promoted to assistant general sales manager; and Granger Green is the new manager of the Lake Shore district.

Mr. McConnell joined the utility in 1931 as a clerk in the customer accounting department, where he worked part-time until his graduation from the University of Rochester in 1933. He was then transferred to the credit collection department.

After four years of service with the U. S. Navy during World War II, Mr. McConnell rejoined Rochester Gas and Electric in the househeating sales department in 1946. He became assistant employment manager in 1948, which position he held at the time of his recent promotion.

Mr. Brady joined Rochester Gas and Electric in 1946 as a copywriter. At the time of his promotion, he was serving as assistant advertising manager.

Schuyler F. Baldwin was named to succeed Mr. Kelly as RG&E public relations director some months ago. Mr. Baldwin is a member of A.G.A., and serves this year on the Association's Public Information Committee.

Mr. Kelly, who began his career as a newspaperman in 1909 on the staff of the *Rochester Herald*, assumed the position of RG&E publicity director in 1935. Later, he became advertising manager, and when the publicity and advertising functions were merged with public relations, he headed the enlarged department.

A member of Edison Electric Institute and American Gas Association, Mr. Kelly had been active in A.G.A. committee work for years, and last year served on the Publicity and Advertising Committee.

Mr. Rissberger is a graduate engineer from the University of Michigan in 1913 and joined Rochester Gas & Electric that year. He was in the engineering department until 1917 when he became assistant manager of employment and safety. In 1933 he became assistant director of personnel and in 1944 was appointed assistant manager of employee relations. Mr. Rissberger is a member of American Gas Association and the Edison Electric Institute.

Mr. Pike has been with the utility ever since his graduation from the University of Rochester in 1927. He became a member of the sales department and has held almost every important position in RG&E sales work, becoming general sales manager last year.

Mr. Doud brings to his new position a wealth of experience from his work in safety and in civilian defense. He was born in Colorado and came to Rochester with the RG&E in 1924. Until World War II he held various positions in the electric distribution department. During the war, he served in Europe, returning to the local utility in 1945. He became director of safety for the RG&E in 1947. He is a member of American Gas Association, and is active in Accident Prevention Committee work.

Mr. McKie has been with the Rochester utility ever since graduating from the University of Michigan in 1922. He has been in every branch of RG&E sales work since that time, coming to his most recent appointment in 1952 as assistant general sales manager from the managership of the domestic sales department.

Mr. Curtis comes to his work as assistant general sales manager after a long association with the Rochester Gas and Electric Co., in Wolcott, N. Y. where he has been district manager since 1933. Mr. Curtis came with the company in 1920 after his graduation from Cornell as an electrical engineer.

Mr. Green joined the Rochester Gas and Electric in its Canandaigua office as rural representative in 1935 shortly after his graduation from the University of Syracuse as an electrical engineer. He became a field engineer in the Rochester territory in 1937 and was appointed to the work of office manager for the Lake Shore Area in 1940.

Oates heads PAR Committee this year

JAMES F. OATES, JR., chairman, The Peoples Gas Light and Coke Co., Chicago, has been appointed chairman of A. G. A.'s 1953 Promotion, Advertising and Research (PAR) Committee. Stuart M. Crocker, chairman of the board, The Columbia Gas System, Inc., New York, and C. H. Zachry, president, Southern Union Gas Co., Dallas, were appointed vice-chairmen.

The PAR Committee is responsible for raising and disbursing more than $2 million a year of voluntary subscriptions from gas transmission and distribution companies. This amount is expended annually in coordinated programs of promotion, advertising and research for the benefit of the entire gas industry.

Other members of the new PAR Committee are: N. B. Bertolette, president, The Hartford (Conn.) Gas Co.; Charles P. Crane, president, Consolidated Gas Electric Light and Power Co., Baltimore; R. E. Crawford, president, Minnesota Valley Natural Gas Co., Minneapolis; Hugh Cuthrell, president and chairman of the board, The Brooklyn (N. Y.) Union Gas Co.; H. Reid Derrick, vice-president, Alabama Gas Corp., Birmingham; Henry Fink, president, American Natural Gas Co., Detroit; and John C. Flanagan, vice-president and general manager, United Gas Corp., Houston.

Also appointed to the PAR Committee were: Ralph L. Fletcher, president Providence (R. I.) Gas Co.; C. H. Gueffroy, president, Portland (Ore.) Gas & Coke Co.; J. K. Horton, president, Pacific Public Service Co., San Francisco; Paul Kayser, president, El Paso Natural Gas Co., Houston; Wister H. Ligon, president, Nashville (Tenn.) Gas Co.; Kenneth C. Long, president and general manager, The Dayton (Ohio) Power & Light Co.; and Donald C. Luce, vice-president in charge of combined operations, Public Service Electric & Gas Co., Newark, New Jersey.

Additional appointees to the PAR Committee were: J. F. Merriam, president, Northern Natural Gas Co., Omaha; Curtis Morris, vice-president, Transcontinental Gas Pipe Line Corp., Houston; Dean H. Mitchell, president, Northern Indiana Public Service Co., Hammond; Karl B. Nagler, vice-president, The Peoples Gas Light & Coke Co., Chicago; Robert W. Otto, president, Laclede Gas Co., St. Louis; Hudson W. Reed, president, The Philadelphia Gas Works Co.; Jules D. Roberts, vice-president, Mountain Fuel Supply Co., Salt Lake City; J French Robinson, president, Consolidated Natural Gas Co., New York; W. T. Stevenson, president, Texas Gas Transmission Corp., Owensboro, Ky.; and Thomas Weir, vice-president and general manager, Union Gas Co. of Canada, Ltd., Chatham, Ontario.

J. F. Oates, Jr.

Ex-officio members of the PAR Committee are Frank C. Smith, president, Houston Natural Gas Corp., and president, A. G. A.; E. H. Eacker, president, Boston Consolidated Gas Co., and vice-president, A. G. A.; F. M. Banks, president and general manager, Southern California Gas Co., Los Angeles, vice-president, A. G. A.; E. F. Barrett, president, Long Island Lighting Co., Mineola, treasurer, A. G. A.; and Frank H. Lerch, Jr., chairman of board, Consolidated Natural Gas Co., and chairman A. G. A. Finance Committee. J. W. West, Jr., assistant managing director of A. G. A., is secretary of the PAR Committee.

Mengers succeeds Genay at U.G.I.

CHARLES A. MENGERS, for many years assistant engineer of gas design for United Engineers and Constructors, Inc., Philadelphia, has been appointed engineer of gas design to succeed T. B. Genay. Mr. Genay retired on December 31 after 48 years of service to the gas industry.

Mr. Mengers was graduated from Cornell University with a civil engineering degree in 1915. After graduation, he was employed by the Bartlett-Hayward Co. and the du-Pont Co. for several years. After World War I, he joined the United Gas Improvement Contracting Co., later the United Engineers & Constructors Inc., rising in the engineering department to his present position. Mr. Mengers has had extensive experience in the design of manufactured and synthesis gas plants.

Mr. Genay had served United Gas Improvement since he joined the company in 1904, immediately after his graduation from the University of Pennsylvania. During the years, he worked as a cadet engineer and construction engineer in charge of building U.G.I. water gas apparatus in Kansas City; superintendent of manufacture and distribution of the Des Moines Gas Co. from 1911 to 1916; and district manager for Northern Indiana Gas & Electric Co. in the Peru-Wabash district until 1920. Mr. Genay at that time entered the employ of the U.G.I. Contracting Co., later known as United Engineers and Constructors Inc., where he became engineer of gas design in 1928.

Elect Rose president of PNGMA

THE PENNSYLVANIA NATURAL Gas Men's Association has elected Howard S. Rose as its president for 1953. Mr. Rose is the president of the United Natural Gas Co., Oil City, Pennsylvania. Other officers elected at the association's annual meeting in Pittsburgh are: vice-president, R. L. Ehrman, vice-president of T. W. Phillips Gas & Oil Co., Butler; secretary-treasurer, P. L. Kesel, Carnegie Natural Gas Co., Pittsburgh; and executive secretary, George Doying, Mt. Lebanon.

The association also elected Fenton H. Finn, president, New York State Natural Gas Co., Pittsburgh, to its board of directors.

Re-elected to serve on the board of directors for 1953 are the following: Mr. Rose, Mr. Ehrman, C. E. Bennett, chairman of the board, Manufacturers Light & Heat Co., Pittsburgh; E. M. Borger, president, Peoples Natural Gas Co., Pittsburgh; A. W. Conover, president, Equitable Gas Co., Pittsburgh; H. D. Freeland, Waynesburg; J. H. Isherwood, president, Allegany Gas Co., Port Allegany; D. S. Keenan, president, Carnegie Natural Gas Co., Pittsburgh; J. C. Peterson, president, Manufacturers Light & Heat Co., Pittsburgh; and H. H. Pigott, vice-president, Equitable Gas Co., Pittsburgh.

Goerss promoted

SEYMOUR W. GOERSS has been promoted to superintendent of production for Dominion Natural Gas Co., Ltd., Republic Light, Heat and Power Co. and Penn-York Natural Gas Corp., Buffalo, New York.

In his new capacity he will have charge of all phases of natural gas production. He has served the companies since 1945 as a geologist, after returning from service in the United States Navy during World War II. In addition to his new duties, he will remain in charge of company geological development work.

Reynolds is personnel manager

JOSEPH A. REYNOLDS, formerly assistant manager, has been named manager of the personnel department, Brooklyn Union Gas Co., Brooklyn, New York.

Mr. Reynolds has been with Brooklyn Union since February 1936, when he joined the company as a district house heating supervisor in the new business department.

In July 1937, he was advanced to assistant district sales manager and the following year to district sales manager. In 1940, he transferred to the utility's Newtown branch and remained there until 1944, when he was assigned to the personnel department as assistant personnel director. In 1945 he became a retail sales supervisor, and the following year domestic sales manager. He was named assistant personnel manager in 1952.

Texas Eastern announces promotions and appointments

SEVERAL PERSONNEL promotions and appointments have been announced by the Texas Eastern Transmission Corp., Shreveport, Louisiana.

E. A. Koenig is now the vice-president in charge of operations for Wilcox Trend Gathering System, Inc., Dallas. Mr. Koenig was formerly general superintendent of Texas Eastern Transmission Corporation.

At the same time it was announced that H. M. McDonald has been appointed general superintendent, and Paul Hughen has been promoted to pipeline superintendent. Others advanced were Carl R. Sisson, who replaces Mr. Hughen as manager of the corporation's division three in West Chester, Pa., and Murrell Carlisle, who replaces Mr. Sisson as assistant manager of that division.

Mr. McDonald was employed by Texas Eastern in 1947 and was elevated to pipeline superintendent in 1948. He has served as acting general superintendent of the company since April 1952.

Mr. Hughen joined Texas Eastern in 1947 and has served as assistant manager of the corporation's division one, and manager of divisions four and three, having been in charge of division three since June 1951.

Mr. Sisson has been employed by Texas Eastern since 1947. He was promoted to assistant manager of the corporation's division two in 1951, and in April 1952 became assistant manager of division three.

E. A. Koenig

H. M. McDonald

Paul Hughen

Mr. Carlisle joined Texas Eastern in 1948 and held positions of engineering inspector and pipeline foreman before being promoted to assistant manager of division three.

Mr. Koenig, who joined Texas Eastern in 1947 as superintendent of compressor stations and served as general superintendent of the company from August 1947, to the time of his resignation, has had a long and productive career in the oil and gas industry. He has been on leave of absence from Texas Eastern since April 9, 1952, when he was called to Washington, D. C., to serve as chief of the Gas Transmission Branch, Gas Operations Division, Petroleum Administration for Defense, U. S. Department of the Interior. He has been released from his government appointment to accept his new duties.

Chemical Bank forms oil and natural gas department

PHILIP F. SHANNON and Ben F. Zwick joined the Chemical Bank and Trust Co. on January 1 to head a new oil and gas department. The department, located in New York, will specialize in all phases of banking for petroleum and natural gas.

Mr. Shannon's position will be that of senior consultant, while Mr. Zwick will act as department manager.

Mr. Shannon, a former professor of petroleum engineering at the Colorado School of Mines, has been manager of the Tropical Oil Co., manager of western Canadian operations for Imperial Oil and president of Royalite Oil. More recently, he was regional coordinator of production in western South America and Canada for the Standard Oil Co. of New Jersey.

Equitable advances three upper-echelon executives

T. H. EVANS, formerly vice-president of Kentucky West Virginia Gas Co., of Ashland, Ky., has been appointed to the newly created position of vice-president in charge of sales for Equitable Gas Co., Pittsburgh. Walter C. Bomhoff, formerly manager of planning and development at Equitable, succeeds Mr. Evans.

It was announced, too, that John V. Goodman, superintendent of production and geologist has been advanced to the position of general superintendent of production and chief system geologist.

Mr. Evans attended the School of Business Administration, University of Pittsburgh and joined Equitable Gas Co. in 1937 as a commercial heating salesman. He has since served as commercial salesman, commercial representative, supervisor of commercial heating sales, manager of commercial specialty sales, promotion manager, assistant general sales manager and assistant to the vice-president in charge of operations. He was named vice-president of Kentucky West Virginia Gas Co. on February 1, 1952.

Mr. Evans is a member of American Gas Association, Pennsylvania Gas Men's Association, American Petroleum Institute, and Kentucky Oil and Gas Association.

Educated at Carnegie Institute of Technology, Mr. Bomhoff joined the Equitable Gas Co. in 1926 as a clerk in the gas measurement division. Since then, he has served successively as cadet engineer, distribution supervisor, assistant to distribution engineer, gas engineer and manager of planning and development.

Mr. Bomhoff is a member of A. G. A., Pennsylvania Natural Gas Men's Association and Engineers' Society of Western Pennsylvania.

T. H. Evans

Walter C. Bomhoff

John V. Goodman

Mr. Goodman will have general supervision of the production and transportation facilities of the Equitable Gas Co., and Philadelphia Oil Co., in Pennsylvania and West Virginia, along with general supervision over the geological functions of the entire Equitable Gas Co. system. The company's activities extend over Pennsylvania, West Virginia, and Kentucky.

Mr. Goodman, a native of Clarksburg, W. Va., received his B.S. degree from West Virginia University. He entered the employ of Equitable Gas Co., as a fieldman in the geological department, 1927. He was made assistant geologist in 1931, and superintendent of production and geologist in 1944.

Mr. Goodman is a member of the American Gas Association Committee on Underground Gas Storage, chairman of the Subcommittee on Statistics of Underground Gas Storage and a member of the Subcommittee on Natural Gas Reserves. He is a member of American Petroleum Institute, and served as chairman of the Eastern District in 1947. For his contribution, he received the American Petroleum Institute's citation for service in acknowledgment of his distinguished and meritorious work and in recognition of his constructive leadership. He is also chairman of the West Virginia Petroleum Research Advisory Committee for 1953. Mr. Goodman's other affiliations include the Pennsylvania Gas Men's Association, West Virginia Oil and Gas Association, Pittsburgh Geological Society, Appalachian Geological Society, American Association of Petroleum Geologists, and the Engineers' Society of Western Pennsylvania.

Harper named vice-president of Rockwell Manufacturing

M. J. HARPER has been made a vice-president of the Rockwell Manufacturing Co.'s meter and valve division.

Mr. Harper has been in the meter and valve division for over 30 years, first as a salesman, district manager of the New York office, regional manager of the eastern region, and now vice-president.

He is a member of the American Gas Association, the New England Gas Association, the New Jersey Gas Association, the Society of Gas Operators and the Gild of Ancient Supplers.

Management Workshop

(Continued from page 5)

ing of executive manpower, while others were leaders in the allied fields of education, psychology and philosophy. Under the guidance of the Columbia staff, workshop members formulated for their own guidance a program for the selection and training of executive manpower.

The first Utility Management Workshop closed in an atmosphere of enthusiasm for the task of training executive manpower. Each member was determined to adapt the product of his fortnight's concentrated study to the problems of his particular company.

From the experiences gained, the Columbia University's Department of Industrial Engineering has planned its second Utility Management Workshop. It will be held at Arden House May 18-29, 1953, and is limited to 45 members. The utility industry can confidently expect highly satisfactory results by participating in this workshop. Further information may be had from Professor David B. Hertz, Columbia University, New York 27, New York.

Outlook for business

(Continued from page 22)

dollars per annum.

Defense production constitutes a brand new industry comparable in importance to the automobile industry, and that too is bound to have an impact upon the economy of the country.

To the above should be added the great economic and social changes which have taken place during the last decade.

If you take all these factors into account you will get an answer to the question, what the long range outlook for business will be. I believe the answer is this: while a decline in business activity sometime in 1953 or maybe in 1954 is indicated, the decline when it comes will be only moderate in character, and will not last very long, not because of government intervention, not because of huge expenditures by the government, not because of additional inflationary measures by the administration, but rather because of the great inherent strength of the economy of our country.

The final question which one has to analyze is this:

When the downward readjustment comes, will the natural forces be permitted to operate or will government intervention prevent even a minor readjustment?

If I were talking a week from today, (Editor's note: Speech presented one week before the Presidential election) I might be able to give you a better answer. But no matter how you look at it, I don't see how one can adopt a pessimistic view about the future of the country.

In spite of the huge public debt inherent in our economy; in spite of the huge private debt; in spite of the back-breaking burden of taxation; in spite of the deficits in government, and in spite of the deterioration of the purchasing power of the dollar, our economy essentially is sound.

When the good Lord created the world he endowed us with all kinds of natural resources. While we have used up many of those in our country, we continually uncover new ones. We have an industrial plant unmatched and unrivaled in the world. We have the technical know how which does not exist anywhere else in the world. We have an abundance of skilled labor. The financial position of our corporations and companies is sound, in spite of the increased public debt and private debt. The liquid savings in the hands of our people exceed two hundred billion dollars. The financial position of most individuals and farmers is sound.

What is lacking is good common sense.

If next week we show good common sense, then I believe we will have little to worry about in the economic future of our country.

Merchandising

(Continued from page 10)

pliance dealer should do the selling job alone for the gas industry.

4. Gas appliance dealers are not opposed to the gas companies being in the merchandising business.

5. Gas appliance dealers make more money and are more prosperous when the utility is merchandising than they are otherwise.

I have been urging the gas industry to get back into the merchandising business, and to employ retail appliance salesmen, for many years. I know that the selling job can be done by a complete selling organization that is built around the good old-fashioned door-bell ringing house-to-house canvassing salesman. My company has been doing the job that way for more than a quarter of a century.

We consistently sell between twenty and thirty dollars of merchandise per customer in all kinds of times, good or bad. As to merchandising, 1950 was the biggest merchandising year in the history of the country. We were in a sellers' market and appliances were easy to sell. My company sold $2,640,000 worth of merchandise to about ninety thousand customers, or an average of $29 per customer. In 1951, the appliance business went all to pieces. The dealers who had been expecting people to come into their stores to buy merchandise discovered that people weren't coming into their stores to buy. They didn't have salesmen to go out and get the business, so they started cutting prices and giving excessive trade-in allowances. And all of us know that price-cutting never did stimulate business. As a result, 1951 appliance sales dropped somewhere between twenty and fifty percent.

In 1951, my company sold $2,573,000

(Continued on next page)

worth of merchandise. We showed a drop of less than three percent, while the industry was dropping twenty to fifty percent.

So far this year, 1952, the appliance business is still not good, but our sales for the first nine months are $200,000 ahead of the first nine months of 1950. We're currently in the middle of our ten weeks' Fall Campaign, featuring the Old Stove Round Up, and others. We have set a quota of $650,000 with actual expectations of reaching $750,000. This would be the equivalent of $6.43 worth of merchandise per customer served.

[In a press-time telegram in response to a query from the A. G. A. MONTHLY, Mr. Hayes reports: "Results of ten week fall sales campaign were $974,176 against quota of $650,000, or 150 percent of quota. This equaled $8.35 in the ten-week campaign, per customer served. For the entire year 1952 we sold $2,821,000, or an average of $24.19 each for the 116,600 customers served. Sales for 1952 exceeded 1951 by $248,000. This selling job was accomplished by a sales department consisting of 48 sales people with full cooperation of all company employees.]

That selling job could only be done by a complete selling organization built around the good old-fashioned door-bell ringing, house-to-house canvassing salesman.

We have forty-seven salesmen, enough salesmen so that every one of our customers is called on regularly and kept informed and kept sold on our service.

Now, if Montana-Dakota Utilities Co. can do the selling job that needs to be done in the gas industry by employing house-to-house canvassing salesmen, every gas company in the industry can do likewise. And if the gas industry will get down off its high-horse, get back into the merchandising business, employ house-to-house canvassing salesmen, and do the kind of a selling job that we did twenty-five years ago, and are capable of doing today, we can demonstrate very conclusively to our competitor that the so-called swing from gas to electric is neither logical nor inevitable.

Operating

(Continued from page 31)

and diameter. This causes the corresponding values of K_s or K_s' to likewise differ and presents the necessity of representing a number of different values of K_s or K_s'. In the electric circuit, K_s is represented by K_o where

$$K_o = K_s \frac{\sqrt{B}}{A} \qquad \text{(Eq. 7)}$$

in which

A is the ratio of the number of units of gas flow to the corresponding number of units of current.

B is the ratio of the number of units of pressure drop to the corresponding number of units of voltage.

If the system being analyzed is an intermediate pressure system, K_s' is represented by K_o where

$$K_o = K_s' \sqrt{C/A} \qquad \text{(Eq. 8)}$$

in which

A has the same meaning as before

C is the ratio of the number of units of Pa to the corresponding number of units of voltage

The different values of K_o are taken into account by setting the pipe potentiometer (Figure 3) to the appropriate values which can be easily calculated. This allows a single curve on the oscilloscope screen to be used for adjusting all sections of the network.

Appendix II — Analysis of an intermediate pressure gas system

The complete solution of an intermediate pressure gas system by this newly developed method as well as by conventional calculation is given in the following material.

A map showing system layout, pipe lengths, pipe diameters, loads, supply pressures and pipe numbers is given in Figure 4, along with the solution of pressure and flow distribution, as obtained by slide-rule calculation. The slanted numerals above the flow arrows designate flows in thousands of cubic feet per hour. The vertical numerals under the flow arrows designate the "Pa drop" in each section. The gauge pressure is indicated at each junction by the numbered flag. The network analyzer solution is given in Figure 5.

Table I shows the length, diameter, K_s', K_o and X (potentiometer setting) for each pipe with flows obtained by each method.

K_s' was obtained using a gas flow computing slide rule.

K_o was obtained using the relationship of Equation 8.

In this case, one-million cubic feet of gas per hour corresponded to 1 ampere, giving

$$A = \frac{10^6}{1} = 10^6$$

Also 7 units of (Pa) corresponded to 1-volt, giving

$$C = \frac{7}{1} = 7$$

therefore

$$K_o = K_s' \frac{\sqrt{7}}{10^6} = K_s' \times 10^{-6} \sqrt{7}$$

Based on these relationships the current in amperes in any element would be interpreted as a flow in millions of cubic feet per hour in the corresponding pipe section. Likewise a voltage drop in volts would be interpreted as a "Pa drop" seven times as large numerically.

The potentiometer settings (X) were found using the relationship

$$X_n = X_s \frac{K_{os}}{K_{on}}$$

The smallest K_{on} was found and the corresponding X_s was chosen arbitrarily as being equal to 10. All other potentiometer settings (X_n) were then calculated.

After the network had been adjusted, the current and voltage distribution was measured. Since 1 amp represented 1 million cubic feet per hour, the current reading could be converted to thousands of cubic feet per hour by multiplying the current in amps by 1000. Likewise, since 100 volts represented a Pa of 700, the voltage drops could be multiplied by 7 to obtain the equivalent Pa. With the Pa thus obtained for each pipe, the actual pressure could be found at all points if it were known at one point. The gauge pressure was specified at 35 lbs. per square inch at point A. All other pressures could then be calculated since

$$Pa = \frac{(P_1 + P_2)}{2} (P_1 - P_2)$$

Knowing Pa from the preceding work and calling $P_1 = (35 + 15) = 50$ pounds per square inch absolute, P_2 could be found. The results of the network analyzer solution are shown in Figure 5.

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Home safety record

(Continued from page 18)

company it should further be possible to pin down which type of appliance is causing the major portion of the accidents. Based on studies in a number of cities, it is my opinion that the most significant single group of appliances is *unvented appliances used as the sole source of building heat.*

The reason why in my opinion heating is so significant is that an appliance used for heating runs continually or nearly so. The record of fatal accidents shows a great increase in the coldest weather. When people are cold they may even seal up windows. In fact, in a recent case the use of a plastic tape around the window crack was most important factor.

In the deep South, thousands of homes are regularly heated with unvented space heaters and there is very little record of trouble. This isn't hard to understand in terms of the shorter hours of use of the heating equipment and the generally looser construction of the rooms. This very fact again points to the local nature of the problem and to the likelihood that situations will be acute where there are cold premises, particularly rooming houses, small quarters, one and two room apartments, or other sub-standard conditions which lead to the attempt to burn gas under improper conditions.

Sometimes we ask why there are American Standards and A. G. A. Approval for unvented space heaters at all. You will agree that it is undoubtedly better that such equipment meets minimum standards for design and for acceptable input rating standards rather than to have such appliances outside of the scope of any testing program. This does not mean that our industry is unmindful of the very points which we have just discussed.

Although this paper started with the general concept that gas and gas appliances essentially are a relatively safe element of home life, the gas industry is nonetheless anxious to take the lead in reducing any remaining accident hazards to an irreducible minimum.

To this end a new American Standard for the Installation of Gas Piping and Gas Appliances in Buildings has been adopted and the identical standard was proposed to and adopted by the National Fire Protection Association and the National Board of Fire Underwriters. Although this work was only finished in December of 1950 the new standards have already been enacted into building codes in a large number of cities and states including such leading states as New York. It is also being used in housing ordinances as distinct from building codes since it can be applied in that way to existing situations.

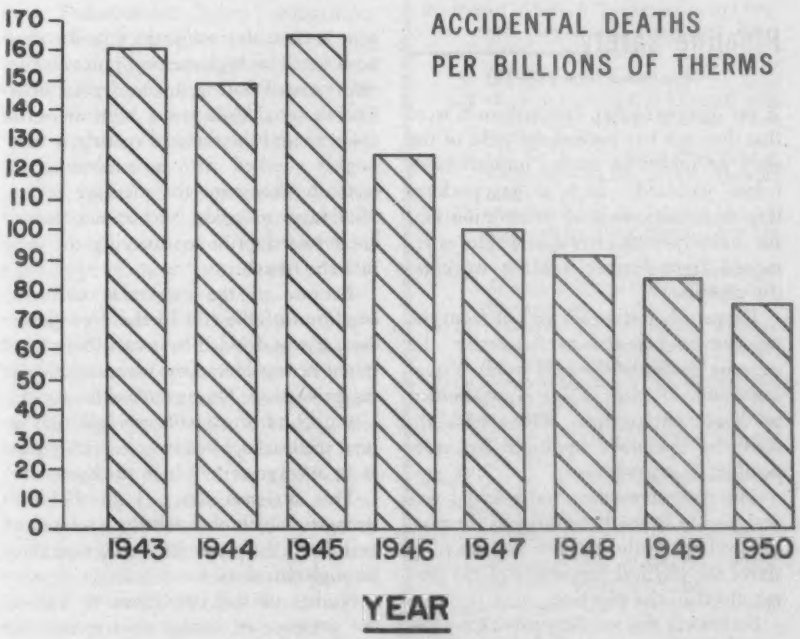
The gas industry is confident that the wider enactment and the enforcement of these new standards will go a long way toward reducing and eliminating hazards from gas. As a corollary to this there must be education of builders, installers, plumbers, heating contractors and others engaged in putting appliances in homes. Many gas companies are undertaking active programs along these lines and their accumulated effect will soon be felt. This program for action is preventive in nature in that it primarily will monitor the future home by requiring proper installation of appliances.

In a few cities there may be a problem of the moment. Where the fatality index indicates that a serious situation exists, the steps to be taken will suggest themselves once the true nature of the local situation is correctly appraised. The first step is a typical study of the environmental factors and by pinpointing the occurrences in the part of the city where they are concentrated.

From past experience we know that insufficient room air, that is insufficient ventilation, is likely to be the principal cause of accidents. Insufficient air can aggravate the operating condition of a maladjusted appliance and even when a properly adjusted appliance operates for enough hours, lack of ventilation could certainly lead to trouble. The remedy is as evident as the cause—provide ventilation and require, as modern standards do, the use of vented gas appliances in quarters of this kind.

Legal control over such conditions can scarcely be exercised through a building code since that would apply to new construction, but a good code exerts a strong influence toward improving all installations. In addition, housing acts, health department surveys, and education of landlords and tenants effectively supplement such action. In those specific parts of a relatively small number of cities in the United States where the record is poor, efforts of this kind would certainly reduce fatalities.

Because gas accidents involve technical details with which a health department may be unfamiliar, an important step would be the development of a maximum degree of cooperation between the utility company and the department to the end that the record of our industry may continue to improve at an even more rapid rate than shown in the last ten years.



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Andrew B. Young, Peoples Water & Gas Co., Philadelphia, Pa.

Pipeline safety

(Continued from page 11)

X-ray determination. For each such weld that does not test beyond the yield of the steel or otherwise shows imperfections below standards—such as gas pockets, slag inclusions, lack of penetration and for ductility—the identified welder is removed from further welding work on the pipeline.

Frequently test welds are cut from the pipeline and tested to determine the running quality of the field welds. Visual inspection of girth welds is augmented by X-ray photographs. These tests are made by operators employed by independent X-ray engineers.

The type of welding rod selected was designed to fit the metallurgy of the pipe to develop tensile strength and ductility above the physical properties of the parent metal in the pipeline.

Following the welding procedure, the pipe is then cleaned, primed, and coated with a coal tar high melting point enamel impregnated with reinforced glass fiber. The material used has a high dielectric strength and the finished coating is thoroughly checked with an electronic detector to determine the presence of any "holidays" or voids. Such minor defects are repaired prior to lowering the pipe into the trench.

Because of the extremely corrosive condition of the soil in the New Jersey area, it was decided to install there what might be considered the ultimate in coating protection. This is a somastic coating, a compound of asphalt, asbestos, and an inert material applied over the entire pipe at an average of 5/8 inch thickness.

This material has a high dielectric strength, which obviated the necessity of examining the pipe in the congested areas through this section.

Studies of soil conditions as well as the presence of strong electric currents guided the installation of cathodic protection equipment. Test leads were installed at intervals of one mile to facilitate frequent checking of the electrolytic conditions being encountered.

Prior to operation, the completed pipeline was tested in short sections. The testing operations (except for that section from Station Number 20 to the Hudson River) follow:

Removal of all air in the pipe by a complete purging operation during which natural gas, at low pressure, was forced through the section of the line under test.

A pipeline cleaning device was then run through each section. This removed iron oxides, dirt, debris, liquids, or any other foreign bodies that may have entered the line during the construction operations.

Each of the above tests was conducted incrementally in several stages and the section under test was carefully checked

and inspected after each stage.

Block or shut-off valves were installed at frequent intervals for the purpose of isolating any particular section of the pipeline.

The main line valves are of the plug type, which insure a positive shut-off in a minimum space of time.

Each valve was carefully tested following installation. The valve was then securely locked in its operating position.

The line was tested to a pressure of 50 psi over the maximum operating pressure for a 24-hour period.

During the entire testing procedure residents along the right-of-way were kept continuously appraised of the testing operations by individual and personal contact with each person or head of a family or group living or working within 500 feet on either side of the pipeline.

At no time was a test pressure applied until the "all clear" had been given to the testing crews by the employees responsible for the notification procedure. The pipeline from Station Number 20 to the Hudson River was tested hydrostatically.

The pipeline system is staffed with maintenance crews situated at frequent intervals along the line. At these locations are stored the equipment, trucks, cranes, hoists, tractors, cutting and welding units, length of pipe, fittings, valves, and other materials necessary to maintain the line and to meet any emergency. The duties of the maintenance crews are to maintain the pipeline in a safe and stable operation on a 24-hour basis. Each crew is equipped with mobile radio equipment installed on its trucks, which enables it to be in constant two-way communication with the compressor stations, the central dispatching office in Houston, Texas, and the various patrol planes.

A complete pressure control system is utilized throughout the pipeline system and at no compressor station can the discharge pressure exceed the maximum operating pressure of 800 psi. This pressure is further automatically controlled by the pre-set blow-off or safety valves at each compressor station.

Each compressor station is equipped with an emergency shut-down switch, which enables the entire station to be isolated from the line in a matter of some 47 seconds. The switch, mounted on a pedestal, is situated near the entrance to the parking lot. This is the point at which all employees would normally pass when leaving the station.

In the event of an emergency, it is felt that if the employees were forced to leave the station, the majority of them would normally pass the location of this emergency switch, one of whom would set it in operation.

When the handle is turned, it actuates a series of electric circuits.

The first series immediately shuts off the Rectox units supplying the power to the ignition on the compressor engines, thus shutting off the flow of gas through the compressors. The next contactor actuates a switch that closes on a circuit supplying power to the electric motor-driven valve mechanism on the side gate suction valve, closing off the intake gas to the station. The next contactor closes a circuit that operates the electric motor-driven discharge valve for the station, closing this valve. The next contactor opens up the main line block valve, which normally is kept closed when the station is in operation. This action effectually by-passes the station and allows the main line to flow uninterrupted past the station.

Transcontinental's natural gas pipeline and its operations extend 1,840 miles from Mercedes, Texas, to 134th Street, New York City. Including sales and purchase laterals, the system contains a total of 2,330 miles. The major portion of the line is 30 inches in diameter. The pipe is welded steel of a special formula to provide extra strength. Nineteen compressor stations maintain the pressure and provide a maximum volume.

At a recent meeting of the Natural Gas Transmission Safety Association, each of the member companies was polled as to his most frequent, costly and outstanding hazard as reflected by his safety records. Surprisingly the answer was unanimous: highway automobile and truck accidents.

The operating safety record of our company is excellent. Any properly designed, well constructed and well managed large diameter natural gas pipeline system is a safe one to operate.

This is proved by the record of continuity of service of those lines that are modernly engineered and especially designed and built for the purpose of transmitting high pressure gas over long distances. With a record of practically 100 percent of continuity of service behind them, these lines have reduced to a minimum the possibility of breakdowns or ruptures. This has been accomplished through careful attention to design and method of construction from a safety standpoint.

CONVENTION CALENDAR

1953

FEBRUARY

2-4 •A. G. A. Home Service Workshop, Baker Hotel, Dallas, Texas

MARCH

2-6 •American Society for Testing Materials, Hotel Statler, Detroit, Mich.

16-20 •National Association of Corrosion Engineers, Hotel Sherman, Chicago, Ill.

26-27 •New England Gas Association, Hotel Statler, Boston, Mass.

26-27 •Oklahoma Utilities Association, Tulsa Hotel, Tulsa, Okla.

30-April 1 •Mid-West Gas Association, Broadmoor Hotel, Colorado Springs, Colorado

APRIL

13-15 •A. G. A. Purchasing and Stores Conference, Schroeder Hotel, Milwaukee, Wis.

13-16 •A. G. A. Distribution, Motor Vehicles and Corrosion Conference, Hotel Sherman, Chicago, Ill.

16-18 •Florida-Georgia Gas Association, Hotel Biltmore, Palm Beach, Fla.

20-22 •National Conference of Electric and Gas Utility Accountants, Hotel Sherman, Chicago, Ill.

21-23 •Southwestern Gas Measurement Short Course, University of Oklahoma, Norman, Okla.

23-24 •Indiana Gas Association, Annual Convention, French Lick Springs Hotel, French Lick, Ind.

27-29 •Mid-West Regional Gas Sales Conference, Edgewater Beach Hotel, Chicago, Ill.

30-May 1 •A. G. A. Transmission and Storage Conference, Edgewater Beach Hotel, Chicago, Ill.

MAY

4-5 •Eastern Natural Gas Regional Sales Conference, Hotel William Penn, Pittsburgh, Pa.

4-8 •A. G. A. Industrial Gas School, Sheraton Cadillac Hotel, Detroit, Mich.

11-13 •Southern Gas Association, Annual Convention, Jung Hotel, New Orleans, La.

11-15 •National Restaurant Association, Annual Convention & Exposition, Chicago, Ill.

11-15 •National Fire Protection Association, Annual Convention, Edgewater Beach Hotel, Chicago, Ill.

12-14 •Pennsylvania Gas Association Annual Convention

20-22 •GAMA Annual Meeting, The Greenbrier Hotel, White Sulphur Springs, W. Va.

25-27 •A. G. A. Production and Chemical Conference, Hotel New Yorker, New York City

JUNE

14-18 •Canadian Gas Association, Windsor Hotel, Montreal, Canada.

22-23 •Michigan Gas Association, Grand Hotel, MacKinac Island, Mich.

23-26 •American Home Economics Association, Kansas City, Mo.

Personnel service

SERVICES OFFERED

Chemical Engineer—who has specialized in gas production and utilization for many years. Able to serve as consultant or sales engineer for utility or manufacturer of industrial furnaces, burners and gas machinery. Good at showing comparative heating costs with gas vs. other heat sources. **1719.**

Chemical Engineer—Army officer needs three hours for M.S., B.Ch.E., B.S. Math and Chem. Married. Available November. Specialty oil and gas. Scholarship assistant instructor. Research in dehydration of natural gas. Presently instructor, radiological branch, Far East Command Chemical School. Desires responsible position. Spanish perfectly. Accept foreign. **1720.**

Sales Manager—22 years' experience with gas utilities in sales, installation, training, instruction and administration in manufactured, natural and LP properties. Thorough knowledge merchandising. Experienced in dealer-plumber relations. Desires opening where qualifications will be fully utilized. Excellent references. Answers in strict confidence. Married (46). **1721.**

Chief Accountant-Controller—Twelve years of employment in utility field includes diversified experience as senior accountant with consulting firms and an operating company. Present employment for two years as chief accountant of medium sized natural gas company has included establishment of complete system of accounts from initial stages of organization as construction project to actual commencement of operations. This has included organizing the required accounting personnel, the design and completion of appropriate records, systems and methods, budgets, reports and statistics—all without outside professional assistance. College, business and legal background. Outstanding record, excellent references. Resume mailed on request. **1722.**

Development Engineer—Twenty-eight years in appliance development field. Thorough knowledge of A.G.A. Laboratories procedure. Experience with gas, oil and electric ranges, room heaters, refrigeration and air conditioning. Familiar with clothes washers, dryers and control accessories. **1723.**

Sales Executive—Broad, top-flight sales-merchandising experience selling industrial users, distributors, consumers—in the fuel, heating and air-conditioning fields. Skilled in training and directing salesmen—productively; proved results planning, directing, coordinating profit-producing sales, sales promotion and advertising programs. Creative, aggressive, keyed to the tempo of modern merchandising. **1724.**

Comptroller - Budget Director - Administrator—Presently employed with 15 years of responsible experience in budget analysis and administrative methods, tax and governmental relations; office and hospital management. College education and graduate studies. **1725.**

Engineer—Graduate M.E., married. Thoroughly experienced in all phases of gas distribution at all pressures. Natural, manufactured or mixed gas. Experience in design, operation and supervision of distribution facilities as meters, mains, holders, customer service, etc. Knowledge of industrial, commercial as well as domestic application of gas. Experienced in design and execution of conversion to natural gas in large and small properties. **1726.**

Gas Engineer—Capable of assuming administrative responsibilities in construction and operation of gas utility. 17 years experience in production, transmission, and distribution (some storage) with large gas utility. 6 years experience with regulatory work-rates, rate of return, construction, etc. Experience in teaching and writing on engineering subjects. Permanently employed, inquiries confidential (46). **1727.**

POSITIONS OPEN

Engineers-Draftsmen—Senior and Junior wanted—Creative design engineers whose careers are in the utilization of gas for household cooking, heating, drying applications, and who are familiar with any of the following associated categories: Electrical ignition circuits; electronic delay circuits; electronic filters; thermostatic responsive devices; flow regulators; burners and/or heat exchangers; gas control valves of all types. Unlimited opportunity to progress with a well established and expanding organization. Salary commensurate with ability. All replies received in strict confidence. **0672.**

Project Engineer—Progressive Southern California manufacturer of gas appliances has opening for an engineer experienced in design and development of gas fired heating equipment. Your resume of education and experience will be given prompt consideration and will be kept confidential. **0673.**

Administrative Vice President in 38-45 year age bracket. Qualified to coordinate operating, commercial, and accounting functions and administer company's organization and operations. Operating and/or engineering experience essential. Familiarity with rate case preparation and presentation, accounting, and sales promotion desirable. Preferred consideration given to those with combination experience, such as electric-gas, telephone-gas, electric-water, telephone-water. Eastern location. Starting salary range (dependent on qualifications) $13,500-$20,000. **0674.**

Vice President-Operations—in 38-45 year age bracket. Qualified to assume full, final responsibility for operations, engineering, and construction. Operating and engineering experience absolute requirement; familiarity with rate analysis, labor negotiations, analysis of manpower requirements desirable. Sufficient experience, knowledge and background to handle all operating and engineering problems of diversified utilities company. Multi-utility experience essential, such as combination electric-gas, telephone-water, etc. Eastern location. Starting salary range (dependent on qualifications) $12,000-$15,000. **0675.**

Treasurer in 35-45 year age bracket. Qualified to supervise and administer all accounting and quasi-accounting, commercial problems. Experience in utility accounting, including familiarity with F.P.C. and F.C.C. systems, and also in utility financial budgeting and use of budgetary methods for control, essential. Knowledge of systems and methods development and rate case preparation desirable. Eastern location. Starting salary range (dependent on qualifications) $10,000-$12,500. **0676.**

General Sales Manager—in 35-45 year age bracket. Qualified to direct, from a central administrative office, sales and load building program for geographically separated electric, gas, and telephone properties. Experience in actual selling and in building of sales forces absolute requirement. Familiarity with technical bases for competitive selling desirable. Eastern location. Starting salary range (dependent on qualifications) $5,000 plus commission arrangement. **0677**

Manager—For combination utility-bottled gas operation. Good opportunity. Growing area with progressive company in Carolinas. **0678.**

Manager—For natural gas company. City of approximately 15,000 in southern Ohio. Now serving 2000 customers with potential of 2000 additional. Must be thoroughly experienced in distribution engineering, sales of domestic and industrial appliances, office management, etc. A good all-around gas manager required. Good pay for right man with ability and willingness to work. College graduate preferred but not essential. Give age, past experience, salary expected, references. All replies held confidential. **0679.**

Home Economist—Top flight home economist wanted by leading eastern natural gas company. Must have considerable demonstration experience. Desirable metropolitan area. Ultra-modern working conditions in new building. Opportunity open only to single girl. Salary open. **0680.**

Customer Service Engineer wanted midwest territory in growing industrial city. Splendid opportunity for advancement. College graduate preferred and complete customer service experience required. Please give details of experience, education, personal information and salary required. Replies confidential. **0681.**

Mechanical Engineer—Large manufacturing corporation has an opening in its Research Division for a graduate engineer with experience in the design and development of domestic laundry washers and dryers. Must be capable of heading department. Replies held in strictest confidence. **0682.**

Young Engineer with natural gas background interested in trade association work. Location—New York. **0685.**

Incinerator promotion

(Continued from page 8)

Cheyenne, Wyoming, were equipped with similar burners.

As for Michigan, the *Wall Street Journal* reported that 6,000 garbage devourers will be installed in Detroit homes this year, compared with fewer than 300 in 1949. Chicago householders are expected to buy 8,500 this year, in contrast to a puny 500 three years ago.

Incinerator Products Co., Detroit, recently said that its Waste King, once marketed only within 100 miles of Detroit, is now being sold from Minnesota and Iowa to Pennsylvania. In Chicago, Brule Incinerator Corp. said it had set up sales outlets on the Pacific Coast.

Gasinator, in Cleveland, is conducting a preliminary survey into other markets to see, among other things, just how much local gas companies will help to break incinerators into their respective markets. The company is particularly eyeing Chicago, Des Moines and Minneapolis.

These moves—and signs—would appear to threaten Cleveland as "the home incinerator capital," which reportedly is purchasing half of all the home incinerators sold in the nation.

Initiative

● America is exactly as strong as the initiative, courage, understanding and loyalty of the individual citizen—*Gen. Eisenhower.*

Life

● Don't worry about finding your station in life; somebody will be sure to tell you where to get off—*Origin unknown.*

Opportunity

● The guy on top is the one who never gave opportunity a chance to knock—he went out to meet it—*P. L. Andarr.*

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